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MONITORING TIMES

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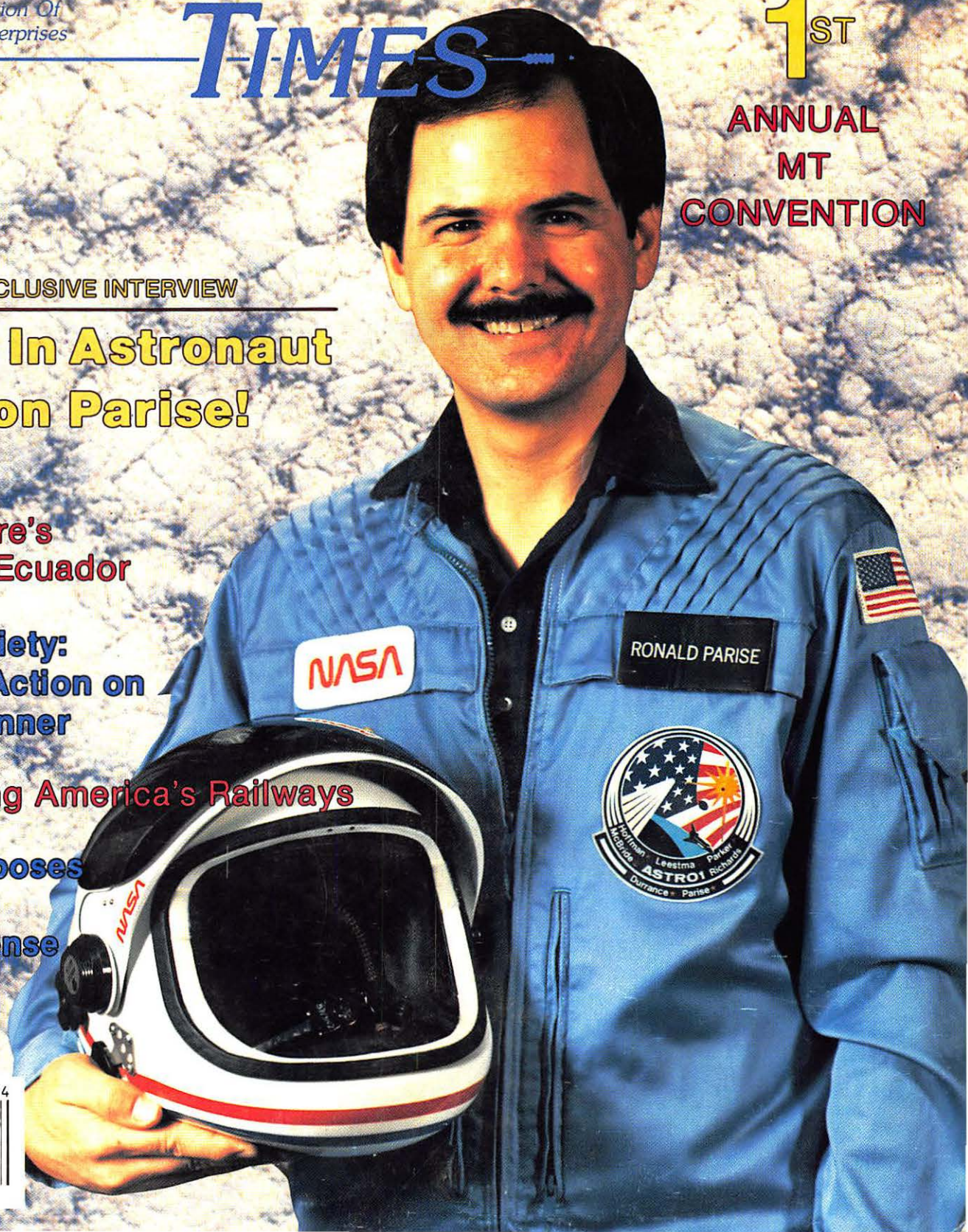
Tune In Astronaut Ron Parise!

**Don Moore's
Radio In Ecuador**

**High Anxiety:
Combat Action on
Your Scanner**

Monitoring America's Railways

**FCC Proposes
No-Code
Ham License**



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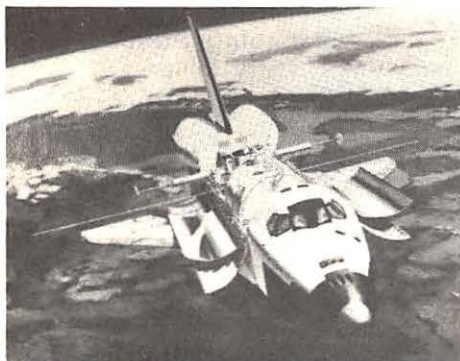
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MONITORING TIMES

April 1990

The Flight of Columbia by Larry Van Horn

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What's the most distant QSO you've bagged? For some lucky folks, it was the flight of Owen Garriott, W5LFL, aboard the space shuttle! If you missed that one, don't despair; Ron Parise, WA4SIR, is here! A member of the Astro-1 mission crew, Ron has received permission from NASA to operate aboard the upcoming STS-35 shuttle flight.

Columnist Larry Van Horn grabbed the chance to talk to Ron about his fascination with radio and how the interchanges will work. Who knows, their next conversation may be from outer space -- and you could be listening in!

Beyond HCJB by Don Moore

10

Sure, sure, everybody has heard Ecuador, right? Well, you may have heard *from* Ecuador, but you may not have heard *Ecuador*. There's a lot more to be heard than HCJB's powerhouse. The schedules may be erratic, the signals may not be clear, but they're there, and Don Moore is your tour guide.



An Ear to the Rails by Bruce Heald

16



Remember the days of hand signals, toots on the whistle, flares, and "hooping orders" to the train crew? Well, it's all been replaced by radio -- faster and more reliable for this faster and more complicated world we live in. Bruce Heald looks both to the past and the future as he gives us a thumbnail sketch of scanning the railroads.

Scanning the Military Madhouse by L. Quarantiello

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If you live near a FACSAC you live close to some of the hottest aviation monitoring available. Don't know what that is? Well, Laura Quarantiello will not only tell you, she's got the maps so you can see for yourself. And the frequencies, so you can listen in ... to F-14s, F/A-18s, F-5s, E2-Cs ... You'll find out why the Navy's fighter pilots' motto is "Train like you'll fight."

ON THE COVER: Shuttle crew member Ron Parise, WA4SIR. NASA photo.

The Night the Plane Came Down 22



Ed Hesse didn't know why he was wakeful that night. But it was second nature to reach over and turn on the bedside scanner. What he at first thought was an unusually realistic emergency drill turned out to be the crash of Avianca Airline's Flight 52. Here's the story of what he heard through the night as radio operators relayed messages and helped at hospitals.

And more . . .

The big news this month is the FCC's formal proposal for a no-code Communicator's ham license which would replace the Novice and Technician levels. Read Ike Kerschner's Ham column for the nitty-gritty; the FCC wants to hear from you before they act.

On Plane Talk, Jean Baker profiles the Swiss aeronautical station, Berna Radio, and kicks around the dilemma of pilot shortages and controversial frequencies. Did you know pilots often talk about UFO sightings they won't report formally? Yeah, too much paperwork. You'll find more aeronautical frequencies in Larry Van Horn's Utility column as well.

Is Radio Caroline back? Outer Limits explores all kinds of activities outside the realm of licensed frequencies.

If you're getting your antennas erected, how about that ground? Your electrical ground, that is. Doug DeMaw reviews the guidelines and suggests a few systems.

Think that nifty new frequency counter just doesn't work? Bob Grove helps sort out myth from reality in his monthly tip from "Ask Bob."

And there's more, of course ... reviews, tips, frequencies, program details, all inside the pages of this month's *Monitoring Times*.

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LETTERS



Paul Kallinger, XERF

"The article you ran on Border Radio was fantastic!" says E.B. "El" Charlton of Baton Rouge, Louisiana. "It took me several minutes to come back to 1990 after reading it." "El" is referring to Durrell Roth's article in the February issue.

"Back in the 1930s I was a broadcast band DXer. In those days, radio stations would put on DX nite and request reports from listeners. I remember picking up Dr. Brinkley's XERA in Acuna on my crystal set on just one such occasion."

Later, "El" graduated to a 5-tube Sears and Roebuck "Silvertone" table radio. "How well I remember those stations: XENT, XERA, XEG -- and one that wasn't mentioned in the article, XERN in Piedras Negras. (The mailing address was Eagle Pass, Texas.) Again, thanks for a wonderful trip back into time."

"How about CKGW Toronto?" According to a reader who signed his name as simply, "Bob," this station was run by the Gooderham & Wortz distillery in Canada and used to "remind those of us in the States that we had Prohibition and they had the liquor."

Durrell Roth's article also brought back memories for Ken Hydeman of Dayton, Ohio. He recalls listening to shortwave and hearing what was probably an editor handing out assignments to his foreign correspondents. Asks Ken, "This must have been at least ten years ago. I wonder if any other *Monitoring Times* readers ever came across such broadcasts?"

I don't know, Ken, but I'm willing to bet that it was a lot longer than ten years ago. Thanks to everyone for their reminiscences.

Interestingly, I had the chance to look over a copy of *The Old Timer's Bulletin*, the bulletin of the non-profit Antique Wireless Association (Box 637, Penn Yan, New York 14527).

It's filled with all kinds of goodies ranging from articles on old radios to restoring old equipment. In the back is a section edited by Charles Griffen, entitled, "Recent Radio and Entertainer Obituaries." The most recent issue noted the passing of 49 notables including 59 year old Bob Boatman, the director of the TV show "Hee Haw," to 71 year old Irv Cattler, a drummer for "Red Norvo, Dorsey, Brown." Interesting concept, if not a bit depressing.



D.R. Media of Houston, Texas, also wrote on the AM broadcast band but chose to dwell on the present -- not the past. "I was so disturbed by your savage attack on AM radio in the letters column that I had to write to you."

"AM radio is making extraordinary contributions to the diversity of broadcasting," insists D.R. "While FM stations are almost exclusively popular music (with the exception of the non-commercial 88-92 MHz band), AM has been experimenting with specialized formats in order to win over an audience."

Audio quality is not a problem for AM, continues D.R. "In most circumstances and to most ears, it can be as good as FM. The problem is the receivers."

Among AM's advantages cited by D.R.: no annoying picket fence propagation in high multipath areas and the ability to go hundreds of miles.

When FCC chairman Al Sikes said that "AM is making extraordinary contributions to the diversity of broadcasting," he obviously hadn't heard about the Clearwater, Florida, FM station that experimented with an all-Led Zeppelin format. Now there's diversity for you!

Seriously, D.R. summed it up. The weak link is the receiver and until reasonably-priced radios capable of picking up decent AM audio quality are available, a large segment of the general public will be deterred from listening, no matter what the programming.

Having written his letter, D.R. closes by saying, "I feel much better now. Now I'll read the rest of the magazine."

I listen in on cordless phones; our forefathers listened in on the party line.

"Please don't use my name," writes GDK. "I'm not sure who reads *Monitoring Times* in my neighborhood and I wouldn't want to spoil some good listening."

"You know, Bob Kay was right. It doesn't matter if you tell someone with a cordless phone how easy it is to monitor them. They just go on using the phone in the same haphazard way. And I go on listening to them. I look at it this way; I listen in on cordless phones. Our forefathers listened in on the party line. What's the difference?"

Another phone listener -- this one prefers cellars -- says that he listens to phone conversations a couple of times a week. "So far I have heard two of our local narcotics officers give names of individuals they have under surveillance. They also discussed a pharmacy they were watching."

"Other interesting intercepts include a girlfriend who called her boyfriend to threaten suicide. Someone else said that they had just bought a gun and were going to kill someone with it. And I listened to a former city councilman, currently running for reelection, arguing with his girlfriend."

"Listening to these frequencies really confronts me with an ethical dilemma. Should I act on the information I hear; the suicide threat, the murder-in-the-planning, the names of drug dealers?"

"Letters" continues on p.100

ACE Takes Uniden to Court

The latest volley has been fired in an ongoing battle between Ace Communications of Indianapolis, Indiana, and Uniden of Japan. Earlier, Uniden charged ACE with seven patent violations in AOR scanners sold by that firm.

Ace now charges Uniden with violations of the Sherman Antitrust Act, alleging that not all of the patents are applicable and that Uniden, which already owns some 40 scanner patents and controls over 80% of the scanner market, is unfairly trying to crush any remaining competition.

F-16 Clips Towers

An F-16 jet fighter returning from a training mission clipped two radio tower guy wires but landed safely at McConnell Air Force Base a few minutes later.

The Kansas Air National Guard jet was traveling about 450 miles per hour when it struck the wires guying the tower of Hutchinson, Kansas FM station KHUT. Two five-eighths inch diameter braided steel cables were severed.

"The Guard safety officer told me that the wires first hit the canopy. That's only six inches above the pilot's head. That's how close he came to being decapitated," said Randy Mettlen, chief engineer for KHUT.

KHUT has had problems with low flying jets before. "I've complained before," Mettlen said. "When the tower was built in 1980, the two men who were hanging the actual antenna on top of the tower said that when two F-4s came by, they were able to look down into the cockpit."

"All Calm" at VOA

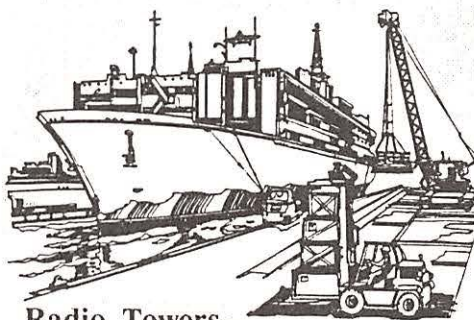
The White House says that "all is calm" at the U.S. Information Agency, but only after administration officials stepped in to restore order in a struggle with the Voice of America.

The dispute that saw USIA director Bruce Gelb try to fire VOA director Richard Carlson was resolved when the VOA agreed to restore

broadcasts in six languages ordered cut two weeks earlier during another Voice budget crunch. Fifty-five people were to be fired in order to trim \$3 million from the budget.

Apparently, Gelb was out of town on the day Carlson announced the cuts. Gelb then returned and read accounts of the cuts within his organization in the media. Official sources say Gelb was "very upset." Other sources, quoted by the Associated Press, said Gelb "went wild" and described him as "almost hysterical."

Gelb is a friend of President Bush and a campaign fundraiser. Carlson was a hold-over from the Reagan administration.



Radio Towers Sting Dock Workers

The Port of Seattle may have to pay to move two broadcasting towers because radio signals are electrifying nearby cargo cranes, zapping workers with shocks.

Since the four container cranes were built in 1986, loading workers have reported getting shocked from the cranes which apparently pick up electrical energy from the radio towers. "It feels like a sting or a bite," says longshoreman Bob Rogers.

The owner of the towers, radio station KJR, is also planning to pack a sting of its own, filing a lawsuit against the port. KJR claims that the huge containerized-cargo cranes distort the station's 50,000 watt signal.

All-Led Zeppelin Station Debuts; Closes

Clearwater, Florida, has the dubious distinction of being home to

the first all-Led Zeppelin radio station. Just before the changeover, the station began playing the defunct band's most popular single, "Stairway to Heaven," over and over again, for 24 hours straight.

Led Zeppelin, a British group of the 1960s and '70s, fused blues, country and heavy metal with dark lyricism. It disbanded after drummer John Bonham died by asphyxiation.

Surprisingly, WKRL was an FM and not a struggling AM seeking publicity. The stunt, which turned out to be only temporary, followed the station's purchase by the Great American Broadcasting Co.

New Commercial Radio News Service

Beginning this month, *Monitor News Reports*, a new radio service offered by *The Christian Science Monitor*, will be available to commercial radio stations. The Monday through Friday service will draw material from more than a dozen global print and broadcast news bureaus of *The Christian Science Monitor*, as well as from *Monitor* staffers at its Boston headquarters.

Monitor News Reports will be distributed to commercial stations on the satellite network of the Associated Press (AP), which reaches some 950 radio stations across the United States. The service will be available on a barter basis, making it affordable to stations in both large and small markets.

Says John H. Hoagland, Jr., Manager of The Christian Science Publishing Society and Editor-in-Chief of the Radio and Television division, "Our mission over 80 years has been to pursue truth and publish it. We are constantly looking for new ways to do that..."

HCJB Victim of Terrorist Attack

According to Ron Cline, president of the pioneer missionary broadcasting service HCJB, "The Voice of the Andes," a band of armed men broke

COMMUNICATIONS

into the transmitter site east of Quito, Ecuador, at about 2:00 AM on February 19th, 1990.

After tying up the transmitter operators, the bandits seized approximately 50 circuit boards from the antenna switching and audio processing equipment for the 500,000 watt transmitter, stole a van and crashed through the security gate to escape. There were no injuries and the van was recovered later by authorities.

The Ecuadorian government responded immediately, as did representatives of the American Embassy, and after frantic efforts by the staff, the station returned to the air at half-power within two days.

A note left by the perpetrators demanded \$250,000 for the return of the equipment. If not obeyed, the note continued, they would blow up the station's hydroelectric power plant. And should any of them be caught, they threatened to kill five missionaries for each terrorist captured.

Heloise on Scanners

The popular syndicated column, "Hints from Heloise" recently pointed out how unscrupulous scanner listeners could profit from their hobby. According to the column, a reader wrote in with the following story, which we paraphrase:

"An elderly friend of mine had her house robbed four times, each time when she was out of town. The last time it happened, she commented to

her insurance agent that it was funny that it never happened before she started asking the police to check her house while she was gone.

"The agent did some investigating and discovered that the order to check the empty house at '101 Main St,' went out over the police scanner daily. Thus, any thief with a police scanner was easily notified that this house was fair game."

Food for thought.



'Hands On' TV

A television crew and several transients helped a homeless mother give birth in Los Angeles' MacArthur Park, an inner-city park where drug deals are commonplace.

Employees of Newsreel Video Service, a free-lance television news crew, arrived shortly before paramedics after hearing a call for medical aid on a police scanner. Crew members trained their lights on the 21 year old mother as she gave birth, filming the event.

When paramedics did arrive, fire Inspector Ed Reed found "There were homeless people around [the woman who had just given birth] and one was holding the child, still attached by the umbilical cord," said Fire Inspector Ed Reed. "The baby was cold and dirty."

The Voice of Wisconsin

Motorists entering Wisconsin will soon be able to learn about attractions and events in the state, thanks to a new low-power radio network.

The State Division of Tourism has spent about \$60,000 of its \$7 million annual budget for low power radio

transmitters. The transmitters will be located on ten plots of government-owned land on the Illinois, Iowa, Minnesota and Michigan borders. Highway signs will urge motorists to tune to 530 on the AM dial (except in Kenosha, where the dial position will be 1600 kHz).

Locations include Genoa City, Beloit, Kieler, Prairie du Chien, La Crosse, Hudson, Superior, Hurley, and Marinette, as well as Kenosha. Says the tourism's communications director Gary Knowles, "We think the return on the investment will be tremendous."

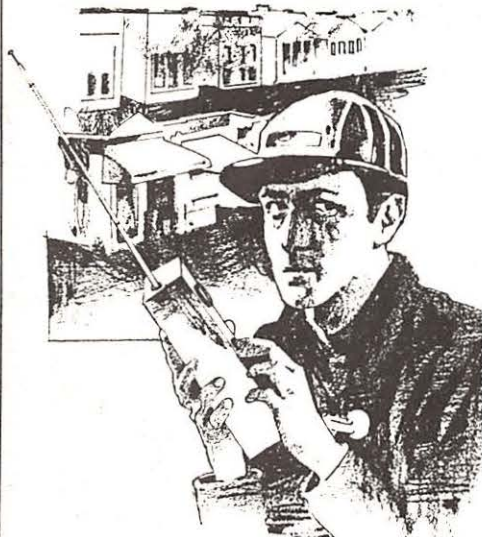
Haiti Clamp Down

The Haitian media, which must feel like a yo-yo, has once again been muzzled. According to reports from Port-Au-Prince, the military government has now told radio stations that they can broadcast only officially approved news.

Effective immediately, even local news reports must be cleared through the state's Information Ministry which has also prohibited stations from "relaying or rebroadcasting any information on Haiti from stations broadcasting from abroad."

Radio is the main source of information in the impoverished Caribbean nation. Haiti shares the island of Hispanola with the Dominican Republic.

Our sincere thanks to: Anonymous, Gardiner, Maine; Dave Alpert, New York, New York; Dr. Edward Annendale; David Brooks, Athens, Georgia; Peter Cammer, Paletine, Illinois; Kent Carson, Oklahoma City, Oklahoma; Torkel Clark, Chico, California; Travis Cox, Virginia Beach, Virginia; David Cutter, Carrollton, Georgia; Greg Gilbert, Marietta, Georgia; Vernon Henninger, Bronx, New York; Ruth Hesch, White Plains, New York; Klio Hobbs, Tecumseh, Kasas; Ken Hydeman, Kettering, Ohio; Jeff Jacobsen; Donald Le Fevre, Forest Park, Georgia; Bruce D. Johnson, Athens, Georgia; Richard Keough, Braintree, Massachusetts; Thomas McKeon, Indianapolis, Indiana; Vince Migliore, Petaluma, California; Michael Nabholz, San Diego, California; Jim Nieznanski, West Allis, Wisconsin; Dean F. Peaks, Chicago, Illinois; Allan Young, Grass Valley, California.



The Flight of Columbia and Ron Parise - WA4SIR

by Larry Van Horn, N5FPW

EXCLUSIVE FOR
MONITORING TIMES
APRIL 1990

When the countdown for the shuttle Columbia approaches "tee minus zero" next month, that brilliant orange column of flame and smoke will be carrying a very special passenger. Astronaut Ron Parise, a member of the Astro-1 mission crew, has been a *Monitoring Times* reader and a long-time ham radio operator.

Parise, amateur callsign WA4SIR, has received clearance from NASA to take his amateur radio equipment aboard the space shuttle and to communicate with hams around the world. Last week, *Monitoring Times* had a chance to talk with Dr. Parise about his upcoming STS-35 mission and the chance to become rare space DX for amateurs and listeners alike.

Ron was born May 24, 1951, in Warren, Ohio. After some prodding, Ron enrolled in a novice amateur radio class with a friend. By the age of eleven, he had passed the test and earned a license. "I had a Hallicrafters SX-100 that I used to listen to shortwave with," Ron said with excitement in his voice. "I was quite a radio buff."

But Ron also had stars on his mind, and his education in later years reflected this interest. He received a bachelor of science degree in physics, with minors in mathematics, astronomy, and geology from Youngstown State University, Ohio, in 1973. In 1977 and 1979, Ron received his master of science degree and a doctor of philosophy in astronomy from the University of Florida in Gainesville.

Over the years, Ron has held many amateur radio callsigns. He was the first ham radio operator in his family. "My dad later became interested in ham radio and got his ticket," Ron said. "We have regular schedules on 40 meters to keep in touch."

Ron is married to the former Cecelia M. Sokol of Youngstown, Ohio. They have two children, Nicholas and Katherine.

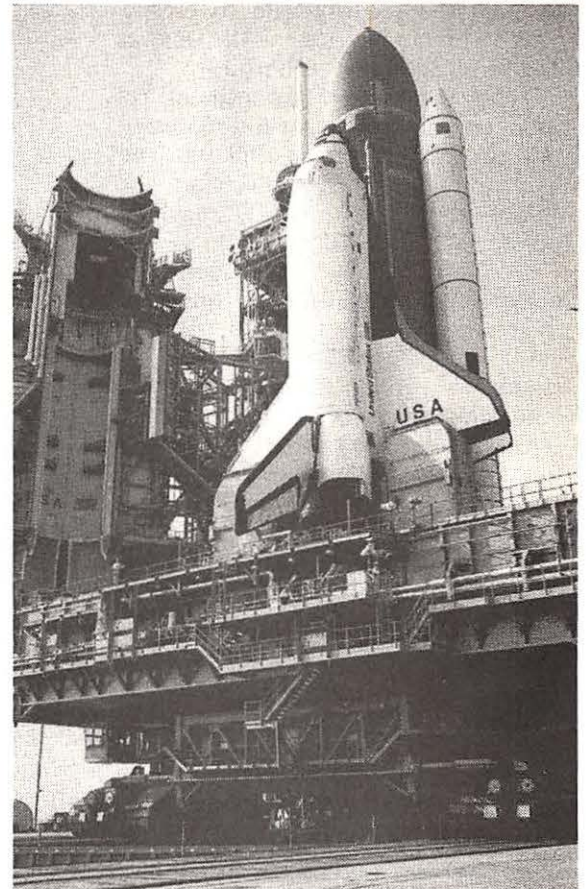
Since his selection for the Astro-1 mission, Ron has moved his family to Houston from their Silver Springs, Maryland, home, trading in his well-equipped shack for a much smaller setup in Houston. "I use a discone antenna in the attic on 2 meters. I've been using it to test the Motorola HT that I will carry into space next month."

Not only has Ron been testing the Motorola rig that will carry his voice transmissions from the shuttle, but he has also been testing the Heath pocket packet radio that will be used aboard Columbia.

"I tried it out on the recently launched Dove-1 amateur satellite launched by AMSAT (Amateur Satellite), Inc." Ron reports that he has been getting good reception. "The Dove satellite packet downlink on 145.825 MHz is quite loud and easily copied on my setup here in Houston."

What areas of amateur radio interest Ron the most? "I enjoy 40 meter ragchewing" Ron said. "I also like experimental forms of communication." Ron has even communicated through several of the OSCAR (Orbiting Satellites Carrying Amateur Radio) satellites from his home station in Maryland.

Amateur radio is not Ron's only hobby. He also enjoys flying, scuba diving, sailing, hiking and camping. His astronomical professional prowess extends worldwide, as he is a member of several organizations including the American Astronomical Society, Society of Photo-optical Instrumentation Engineers and the Astronomical Society of the Pacific.



NASA photo

Columbia creeps up the ramp to the launch pad; the technical team readies the shuttle for launch as the shuttle crew practices and practices some more.

But amateur radio is still his favorite hobby and he is looking forward to operating ham radio in space during his first shuttle mission. The most exciting part, he says, will be "the chance to communicate with school children via voice modes using the Motorola radio. I hope to talk to students in over 40 schools from around the country."

Since the shuttle will be in a relatively low earth orbit, lengthy communications will not be possible. "They (the students) will

probably only be able to tell me their names and where they live," Ron said. "But it's that chance to talk directly with an astronaut that will be especially exciting for the children".

Ron also admits that direct voice communications over the U.S. will not be possible for the majority of the mission. Almost apologetically, Ron says that most of the passes over the U.S. and Europe will occur in the middle of the night. He will only have about one hour during off duty time to turn on the voice portion of the experiment and work some stations. "The majority of my scheduled off time will occur over Australia and South America."

Selected amateur stations in Australia and HF [shortwave] stations in the U.S. have been designated to handle the communication downlink/uplink for the amateur radio voice experiments. "We have setup some gateway stations in Australia to help communicate with the school children," Ron said.

In fact, so important is this chance to chat with the kids that NASA has instituted some of its notorious back-up systems for the event. Ron said, "In case [reception conditions] between the U.S. and Australia are bad, we have leased some AT&T long lines to get the amateur communications through."

Voice communications will not be the only means of talking with the shuttle. With Ron's packet radio, digital communications will also be transmitted from the shuttle. Here's how it will work. An amateur radio operator on the ground will be able to transmit a packet radio signal to the Columbia. It in turn will send back a message followed by a conversation (QSO) number. The onboard system will then record the exchange for further replay on the ground after the mission is over with. This system will act as a logbook and record of the transmissions received by this portion of the amateur radio experiment.

A second digital mode of communication is the mega-beacon. Crew members will be able to load the packet system with a message up to 1700 characters for transmission to the ground. These messages will be transmitted at approximately 5 minute intervals. The messages will consist of amateur radio experiment schedules and mission updates from the shuttle. Schools involved in the amateur radio experiment from the shuttle will be able to interact with this experiment.

Ron says that the packet portion of this

mission's amateur radio experiment should be available for up to 12 hours a day and will be quite audible even on the simplest of scanner radios.

During the interview we asked Ron if they had learned anything from the first two ham in space missions. "Funny you should ask. We did learn a lesson from W5LFL-Owen Garriott's mission." The Motorola HT the Owen carried had a smart squelch installed. This "smart" squelch closed automatically when it determined that nothing but noise was detected.

Owen's amateur radio experiment was very popular, so popular in fact that at times over 500 amateur radio operators might be calling at once. Ron said, "that smart squelch wasn't so smart. It couldn't tell the difference between noise and 500 screaming hams so the squelch stayed closed automatically. Owen had to compensate by manually opening the squelch up to hear stations on the HT."

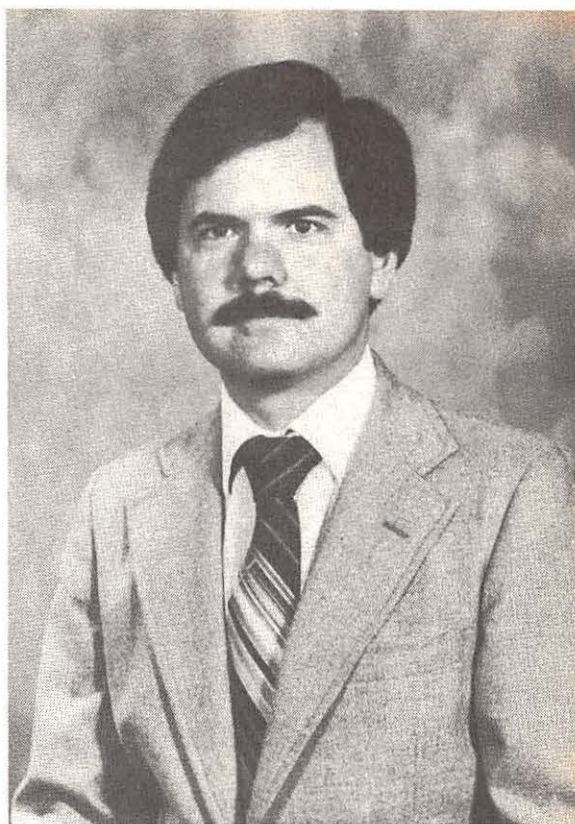
"We have overcome that problem this mission," Parise said. "My HT has been modified with a garden variety squelch like on a scanner, nothing fancy. Just a dumb squelch."

Our biggest surprise during the interview was to learn that Ron has been a subscriber to *Monitoring Times*. "Yes, I can remember the days of the old tabloid style *MT*," Ron said.

So there you have it, an astronaut's view of his forthcoming mission in space, one that will surely attract a lot of interest amongst *MT* readers. Ron even sent a message to all our *MT* readers, "I am sure it will be great fun, and I am looking forward to the chance to work amateur radio from the shuttle."

How can you get in on the fun? If you're not licensed and want to tune in, punch up 145.550 MHz on your scanner and sit back. As Ron mentioned, his "windows" will be short, so be patient.

If you have a shortwave radio, you can follow along by tuning in the transmissions of the Goddard Amateur Radio Club. The Goddard Space Flight Center Amateur Radio



NASA

Ronald Parise of Computer Sciences Corporation, joins the next shuttle mission as a payload specialist to work with the Ultraviolet Astronomical Telescope. But he'll also be communicating to earth via amateur radio and packet radio.

Club, W3NAN, retransmits the astronauts' voice links during unclassified shuttle missions on several ham frequencies in single sideband.

For this mission, they offer a continuous transmission on 14295 kHz, a daytime transmission from 8 a.m. to 6 p.m. on 7185 kHz, and a nighttime transmission from 6 to 10 p.m. on 3860 kHz. Two additional frequencies, 21395 and 28650, will be used depending upon propagation conditions. For those within 100 miles of Greenbelt, Maryland, a continuous transmission is also available at 147.45 MHz FM.

Frank Bower of the Goddard Amateur Radio Club advises both amateurs and monitors to tune in to these frequencies for the latest frequency updates as well as orbital information regarding the location of the shuttle. Propagation conditions may play a large part in what frequencies will be used, but the Radio Club will keep you informed.



NASA

The STS G1-E crew undergoes training; Astronaut Robert Parker briefs payload specialists during a training session at the Johnson Space Center.

Direct downlinks from the shuttle may be heard during overhead passes on 259.7 MHz (primary) and 296.8 MHz (secondary) in the AM mode. The U.S. Air Force Ascension Island tracking station often receives mission audio on or near 20192 kHz (single sideband) from the Cape Canaveral Air Force Station which, in turn, frequently communicates with ships and aircraft on 10780 and 5190 kHz upper sideband.

Remember, although this mission is scheduled for early May, launch dates change often. Keep your eyes on the newspapers for updates. Then put your ears to the radio and take part in a rare chance to touch the skies. You just may get the chance to catch some interesting conversations from a man who has something very much in common with you -- a love of radio.



A comprehensive list of NASA frequencies is contained in Bob Grove's new Shortwave Directory available from Grove Enterprises.



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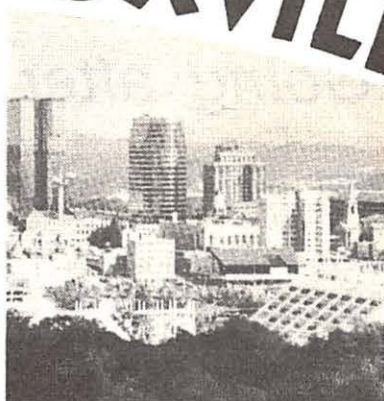
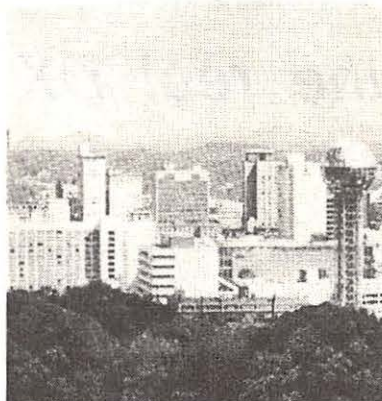
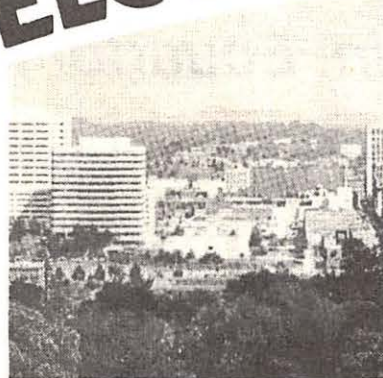
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On Saturday morning, browse among the exhibits. It's your chance to see firsthand some of the hottest equipment and products in the industry and meet the professionals who make the radio business tick. Or join members of the International Radio Club of America (IRCA), a top-rated broadcast band (AM) club, as they hold their annual convention.

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Beyond HCJB

Going after the real DX in Ecuador



by Don Moore

Photos by Don Moore and Theresa Bries

If you haven't heard Ecuador by now, you haven't been trying. No one can miss those high-powered Voice of the Andes transmitters. Thanks to those missionaries-with-a-microphone, Ecuador is one of the first countries most shortwave hobbyists hear and verify.

But just a moment -- what's this? Isn't there something peeking out from behind HCJB's curtain antennas? Yes, there's something back there, hidden by the immensity of those huge antennas. Could it be -- yes, it is! -- dozens of small shortwave stations, just waiting to be logged.

coastal lowlands, where mainly mestizo, black and Asiatic people live. Historically, this region was sparsely populated, due to intense tropical heat and humidity. But in modern times, people moved into the costa to take advantage of that same climate. Today, this is the region of big agricultural exports including bananas, coffee, and cocoa. Local shrimp farming has expanded to make Ecuador a leading exporter.

Going inland, we come to the "sierra," or Andes Mountains. Actually, the sierra is two mountain ranges running down the center of the country, separated by a number of high basins. The basins range from eight to ten

which Ecuador gets its name, they are high enough to escape the tropical heat.

Finally, east of the sierra is the "oriente," the jungle lowlands flanking great rivers like the Napo and Pastaza, which eventually flow into an even greater river -- the Amazon. Although this region is a full third of Ecuador's area, for centuries it was populated by little more than head-hunting Indians and a few brave missionaries. But in recent years, the Ecuadorian government has taken firm control over the region and mestizo farmers are rapidly moving in to carve homes out of the wilderness. This has been hastened by the discovery and exploitation of huge oil reserves in the northern oriente.

Compared to most third-world countries, Ecuador has a lot going for it. Most of the country is fertile, so Ecuador produces most of its own food, and agriculture forms a key part of its exports. Because Ecuador's agricultural production is varied, it is not as dependent on the ups and downs of international trade as are one-crop economies. Moreover, oil from the oriente means cheap gasoline locally, and added money for the national government.

In recent years, Ecuador has built an extensive network of paved roads linking all major towns. Good roads, combined with cheap gasoline and the country's small size, has given Ecuador one of the best and cheapest transportation systems on the continent, helping the country to industrialize.

The Stations

Broadcasting in Ecuador is a lot different from, say, broadcasting in Colombia, which is dominated by huge networks, or broadcasting in Peru, which in some parts of the country is still in its infancy (see "Peru, DXing the Land of the Incas," September 1989 *Monitoring Times*).

Two factors have influenced this. First, there's Ecuador's well-populated, compact size. Demographically, Ecuador can be seen as two large cities, Quito and Guayaquil, and a number of mid-sized provincial (state) capitals and other main towns closely surrounded by small villages. Secondly, there's Ecuador's stable diversified economy and the prosperity it has brought.

Because of Ecuador's size, stations can be located in relatively few principal towns. Unlike Peru, even the most remote areas are close to a provincial capital. Because Ecuador has a well-developed infrastructure



Otavalo's Radio Bahai is the only radio station in the world run by the Bahai faith.

The Country

Before we get to the radio stations, let's take a quick look at the countryside which is their home. Ecuador is a compact country. Its ten and a half million inhabitants live in an area the size of Colorado. The people are about 40 percent Indian, 40 percent mestizo (mixed Indian-European), 10 percent European and 10 percent African or Asian.

Since seasons don't change on the equator, altitude determines climate, which in turn determines a region's economy. Like Colombia to the north and Peru to the south, Ecuador is divided into three distinct regions.

On the west is the "costa," or Pacific

thousand feet high, which lifts them above the tropical heat to a comfortable year-round spring-like climate.

Most of the Indian population lives here, mainly producing vegetables, grains and potatoes for local consumption. Once a region of huge haciendas worked by poor Indian peasants, land reform is breaking the large landholdings of the sierra into small family farms and cooperatives.

Ecuador's 30 volcanos are found in the sierra. Only three are active, including Cotopaxi, the world's highest active volcano. Most of the highest mountains are not topped with fire and smoke, but rather the exact opposite -- ice and snow. Although these mountains are almost on the equator, from

including good transportation, cheap electrical power and a strong commercial base, radio stations are generally better established, more prosperous, more powerful and more professional.

The negative side to this, from the DXer's point of view, is that there is far less need to use shortwave. Many commercial stations get by fine without shortwave. Still, about a dozen of Ecuador's older and more important commercial broadcasters use shortwave to reach a national audience, and a few others use it to reach remote communities in the oriente.

There is, however, another sizable group of shortwave broadcasters in Ecuador -- religious stations. The Catholic Church has a large network of stations throughout the country, many operated by the Franciscan Order. While some are aimed primarily at city dwellers, others broadcast to rural peasants, sometimes with programming in the Quechua Indian language. Most of the Catholic stations are affiliated with the liberal "Liberation Theology" wing of the Catholic Church which works to improve the lot of the peasants through education, so they can assume greater control over their own lives.

Aside from HCJB, Protestant churches haven't been very active. Radio Rio Amazonas, which broadcasts in Spanish and Indian languages to the oriente region, is the only other Protestant station. A tribe of former headhunters who once killed a group of missionaries from HCJB is one of its prime target groups.

There is yet another religious station in Ecuador, and a very unique one at that. Ecuador is home to the only shortwave station in the world run by the Bahai faith. Called Radio Bahai, it is located in Otavalo, an Indian market town. Programs in Spanish and Quechua teach better health and sanitation practices and promote family togetherness.

Going after the DX

Ecuadorian stations are well heard in North America in both the morning and evening. In the winter they begin fading in around 2300 UTC on the east coast, but come in best after 0100. In the morning, they can be heard starting at sign-on, which varies from 0900 to 1100. Thanks to their relatively higher powers and the short skywave distance, many Ecuadorian shortwave outlets can be well heard even in the summer, although for fewer hours.

Get started now, work through the summer, and knock off the easier ones. Then go after the harder ones when conditions improve again in the fall.

Programming on Ecuadorian stations follows the pattern seen in much of the Andes. Generally big city stations have set formats, while small town stations broadcast in program blocks, with an hour of folk music followed by an hour of rock, which in turn

may be followed by romantic music or even a soap opera.

The first program of the day is usually a folk music wake-up program aimed at the "campesinos" (peasant farmers). Most DXers should be familiar with this music from HCJB. If not, HCJB has a weekly 15 minute program called *Musica del Ecuador* that is tailor-made for the potential DXer of Ecuador.

Generally, programming is in Spanish. Andean Indians of Ecuador are more likely to understand Spanish than those of Peru or Bolivia. However, some religious stations have programs in Quechua. A few religious stations in the oriente, like Radio Rio Amazonas, broadcast in jungle tribal languages.

As elsewhere in Latin America, some Ecuadorian stations will turn off their shortwave transmitter for months or years at a time, then suddenly reappear again. Overall, though, the Ecuadorian broadcasting scene is very stable. A reference such as *Passport to World Band Radio* or the *World Radio TV Handbook* can be helpful with the one or two new stations that usually pop up each year.



The San Francisco Church and monastery in downtown Quito are home to Radio Jesus de Gran Poder.

Still, keeping track of recent DX news will help you know which hard ones are being heard, and which inactive stations have turned their transmitters back on.

With a few exceptions, Ecuadorian stations are among the best verifiers in Latin America. Because the stations are more prosperous, staffs are larger, better paid, and more likely to have a little free time to answer mail. Several have their own QSL cards, and a few even send out pennants. Just be sure to write a good Spanish report, and include mint stamps or a U.S. dollar bill to cover return postage.

This theory was borne out during the time

my wife and I spent vagabonding in Ecuador. I remember one hot and humid afternoon when we hopped off the bus in Quevedo, a small banana city on the coastal plain. After finding a cheap "fleabag" hotel, we went out in search of the local shortwave station. After a few blocks, we stopped at a small fruit stand for a glass of chilled pineapple juice, then went to sit in the park.

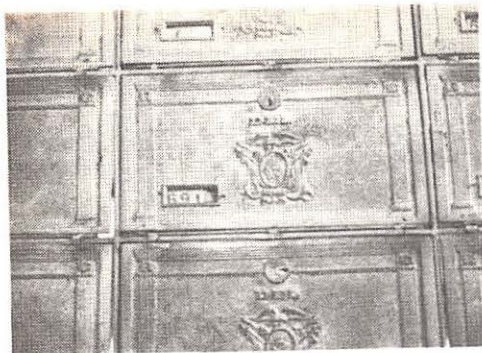
Needing a shoeshine, Theresa called over one of the shoeshine boys, who brought along a dozen companions. Surrounded by curious boys between eight and fourteen years old and dressed in T-shirts, shorts and sneakers, we fielded questions.

So many questions they asked us! Where were we from? Did we come on a plane? Is it cold in the U.S.? Are there shoeshine boys in the U.S.? They were surprised to hear that there aren't. Obviously, if they were to become illegal immigrants, they would have to find a new line of employment.

Gradually the crowd around us grew as more children, and even a few adults, joined the group. The boys taught us some local

Spanish slang, and then asked us about some words in English. Sadly, these boys, like so many in Latin America, had formed an image of the U.S. based on the movies they saw. Excessive violence and easy sex with ever-changing partners were part of day-to-day life in the United States, as they saw it. As we said goodbye, I could only hope that we had given them another image of Americans.

Armed with simple instructions, we soon found our goal a few blocks down the street. A large wooden "Ondas Quevedanas" sign hung across the main street, with an arrow pointing up the adjoining side street. Around the corner and up three doors was an



Most SWLs have mailed a letter to HCJB at Box 691, Quito, Ecuador.

old neon station sign, which still listed the station's frequencies as 3308 and 635 kHz, which hadn't been used since the 1960s.

The huge double doors were open, so in we walked. When I explained to the secretary that I was a listener from the United States, she became very excited and, like her townsmen in the park, began asking us all sorts of questions. Moments later, the station's manager Maruja Jaramillo, joined us. She took us on a tour of their aged facilities.

Behind the offices was a small concrete-floored auditorium seating about a hundred on folding chairs. This was used for live programming, including open-mike talent shows every Sunday morning and evening. Beside the auditorium was a stairway leading up to the three studios. In addition to the main studio, where the DJ manned the console and spun his own disks, there was a separate studio for reading the news and a third studio for recording programs in advance. Also on the second floor was a plush carpeted conference room for about thirty persons, occasionally used to broadcast important local meetings.

Back downstairs we had another introduction to make. Station owner Humberto Alvarado had just arrived on his weekly visit from Guayaquil. At Don Humberto's instruction, Maruja took Theresa and I back upstairs and told the DJ to record an interview with us for later broadcast. He put an LP on the turntable to keep the listeners occupied, and plopped a cassette in the deck in the recording studio.

For the third time in little more than an hour, we found ourselves fielding questions on the U.S. and our visit to Ecuador. Being interviewed in Spanish for a radio broadcast wasn't quite so frightening this time since we had already rehearsed the answers to the questions twice.

Back downstairs again, Don Humberto asked us how the interview went, then invited us to spend the night in his Guayaquil home.

"Sure," we replied, hardly regretting the three dollars we had already spent on our ramshackle hotel. After picking up our luggage, Don Humberto drove to the town's outskirts to check on things at a luxurious secluded hotel he owned. Besides giving us our only glimpse of a first-class Ecuadorian

hotel, we were able to visit the neighboring Ondas Quevedanas transmitter site, planted among Don Humberto's grove of 2,000 citrus trees.

Then we had a three hour joy ride to Guayaquil. Along the way our host frequently stopped at familiar roadstands to sample unusual fruits, delicious charcoal roasted beef and frozen coconut milk popsicles. As we nibbled, he informed us that he also owned an FM station in Quevedo and a mediumwave station, Radio Nove-dades, in Guayaquil. In addition, he was a professor of journalism at the University of Guayaquil and vice-president of the Ecuadorian Press Federation.

He lived with his wife, six sons and a daughter in a spacious and beautiful apartment in downtown Guayaquil. The youngest child has just graduated from high school, but all the children still lived at home. We talked with family members, had a typically late (9 p.m.) supper, and then Don Humberto and his wife, Daisy, took us on a late night drive through Guayaquil.

A daytime tour of very modern and beautiful Guayaquil was taken the next morning. Daisy's press credentials were used to get us a tour of a banana boat. A lawyer and a painter, Daisy also took us to a gallery displaying some of her works.

Lunch at 2 p.m. was typically Ecuadorian. Besides delicious local food, another difference in eating with the Alvarado family was that they employed two young servant girls. As soon as a salad was finished, it was replaced by a bowl of soup. When the soup was gone, the bowl was whisked away in exchange for the main course, in turn replaced by dessert. Middle class Americans, we were not used to this kind of service in private homes.

After lunch we said goodbye to this

wonderful family. Don Humberto drove us to the bus station and bought our tickets to Quito.

Radio Quito

Ecuador's capital city is a door-to-door DXer's dream. There are nearly a dozen shortwave stations to visit. I was especially interested in visiting Radio Quito, as a good example of a large commercial station in Ecuador. The station is owned by "El Comercio," Ecuador's most important newspaper and is located in the newspaper's office building, just a half block from the main plaza in downtown Quito.

Soon I was knocking on station Vice-President Jose Almeida's door. Pleased to have a surprise visit to relieve the day's monotony, Senor Almeida graciously took me on a tour of the facilities. Radio Quito's spacious offices and modern studios occupy the building's entire fourth floor. He explained that this gives the engineers easy access to the rooftop FM and UHF antennas which relay programming to the main AM and shortwave antennas high on Mount Pichincha, overlooking Quito.

Befitting the station's ownership, thirteen out of nineteen daily programming hours are devoted to news and sports. In fact, Radio Quito is Ecuador's primary news station. Still, it is not a big station, and only employs about 25 people.

Radio Quito began transmissions in April 1940, making it one of the first stations to air in Ecuador. Five months later, on August 18, 1940, it was officially inaugurated in a ceremony conducted by then-president Julio E. Moreno. On July 20, 1941, Radio Quito became the first station in Ecuador to retransmit a broadcast from the U.S. when it picked up the world championship boxing match between Joe Louis and Chilean



Indians coming to market pass by La Voz de Saquisilí.

challenger Arturo Godoy. During this event loudspeakers were hooked up in one of the plazas so even those without radios could listen. During these early years, Radio Quito was affiliated with CBS in the U.S. and also carried some BBC programming.

For the DXer, Radio Quito is one of the more easily heard of Ecuador's small broadcasters. It's also the country's best verifier, after HCJB. Every reception report is verified with a folding multi-lingual QSL card, a small pennant and a sticker. They even accept reception reports in English, French and Italian, as well as Spanish (although I still recommend using Spanish).

Word of Quito's generosity has gotten around. The station receives around twenty reception reports weekly -- an amazing number for such a small broadcaster. But they appreciate every report. After being verified, each one is neatly placed in a three ring binder, and placed in a cabinet.

Radio Pastaza

A few days later, Theresa and I had made our way to El Puyo, the center of development of Ecuador's Amazon frontier. El Puyo is a sizable town, almost a small city, but still very rough and wild, like the frontier town it is. The downtown is a collection of mud streets and hastily constructed rough-hewn wooden buildings painted in bright colors. Tropical music blares from the doorways of numerous cantinas. El Puyo is home to a very different example of an Ecuadorian commercial station, Radio Pastaza.

I still remember climbing up Radio Pastaza's narrow staircase to the third floor of a rare cement block building on El Puyo's main street. At the top of the stairs was a small waiting room with a few benches, which led into a sparse office mainly decorated by cheesecake and record promotion posters. Two small rooms opening onto the office served as record library and the station's only studio.

Only two announcers were present, one spinning discs, the other doing paperwork. The DJ on duty quickly put an LP on the turntable so he could talk to the visiting gringo without interruption. The main thing on their minds was whether sex in the United States was as easy as movies portray it.

After we got around their main topic of interest, the two announcers explained that Radio Pastaza is the main commercial broadcaster in the province. Its competition is two other commercial stations and the Protestant missionary station, Radio Rio Amazonas.

Radio Pastaza, they told me, is one of the few radio stations in Ecuador owned by a trade union, in this case, the El Puyo taxi-drivers' union. The union president doubles as station manager, which is why he wasn't in the office. He was out driving his taxi around the muddy streets, honking his horn in the eternal search for passengers. The

announcers were kind enough to type me a QSL letter, so I had no complaints.

On shortwave, Radio Pastaza is one of those on-again, off-again Latin American broadcasters that unpredictably go off the air for months or more at a time, to return again just as unpredictably. After a lengthy inactive period, the station reactivated yet again in the fall of 1989. Unfortunately, Radio Pastaza is not a very reliable verifier, QSLs being as irregular as the broadcasts. Perhaps the double duty that many of the staff members have as taxi drivers accounts for this irregularity.

Radio Paz y Bien

From Puyo we traveled to Ambato. Almost totally destroyed by an earthquake in 1948, the colonial character of this city of nearly 100,000 was wiped out. It was rebuilt as a modern city with many shops, bakeries and banks. An annual Fruit and Flower Festival, held the weekend before Lent, made our several day visit worthwhile. City schools filled with fruit and flower exhibits. Flower draped balconies, parades of people in gay

various times throughout the day, including the 1000 UTC sign-on. Several prayers are scheduled, and the Rosary is read three times daily. Every morning from 8:30-9 a.m., the padre presents "La Hora del Hogar" (The Home Hour) where he chats on various themes related to the family.

At many spots on the schedule there is an hour or a half-hour of "Pensamiento," or "thought," where instrumental music is played, occasionally interrupted by the announcer reading short thoughts for the day, such as, "It is not only lazy to do nothing, but you could do something better and don't," or "It is impossible to conceive what God is capable of doing with a soul, so leave the work to God."

We had just finished discussing the programming when Padre Enrique Pesantez walked in. We took to him immediately. When I mentioned I still had the letter he had written to me in 1974, he uttered a long-drawn-out "Caramba!" He peppers his conversation with "caramba!" and "puchica!", sort of Spanish equivalents of "wow!" and "how 'bout that!"

Here was an enthusiastic man, full of life



Radio Tarqui is one of the most important commercial broadcasters in Quito.

costumes, Ecuadorian folk music concerts and street dances completed the scene.

Ambato is home to Radio Paz y Bien (Radio Peace and Good), a common station in the mornings on 4820 kHz with its Ecuadorian folk music. I was especially interested in meeting Padre Enrique Pesantez, who had signed my 1974 verification letter. When Theresa and I arrived, the padre was out, but Rosa, who seemed to double as announcer and secretary, showed us around.

It is a very modern station, with new equipment purchased in 1980. There are separate studios for the fully automated FM service and MW/SW service, both independently programmed. Yet the station only employed six people!

Rosa gave us a good description of station programming. Ecuadorian music is on at

and joy which he spreads to those in his presence, smiles popping up all around. Pure energy glowed from his short medium-built body. Ecuadorian by birth and a priest of the Franciscan order, he founded the station on June 12, 1952. It is his life.

"Because many people do not come to church, we have to go to them via radio," he says. The station's objectives are faith and culture -- propagating the Christian faith and Ecuadorian culture.

He went to his office and brought out two reception reports, one each from Australia and New Zealand. "They write about the station. Caramba! People all over the world write me. They send all kinds of things, cassettes of the station." He knows no English, nor does anyone at the station, so he asked us to translate the reports, which were



Radio Paz y Bien is Padre Enrique's life work.

written in English. Going through the program details, he noted, "The morning program, they heard the morning program."

Then into his office where he hunted among piles of books and papers, finally coming up with the prize -- the two most recent cassettes, one from Italy and one from Sweden. The padre gets a kick out of all this. Not only does the station minister to the local community, but Radio Paz y Bien sends Ambato and Ecuador to the world and brings the whole world back again. He has a stack of verification cards to send to those wonderful people all over the world who wrote to him.

I asked him if I could take a picture of him by the sign over the front door. "Caramba!" he exclaimed, straightening up. He hurried around the station to who knows what purpose, save to tell those present that he was getting his picture taken. Below the sign he stood, full of pride, as I snapped two pictures.

"Come on in," he shouted, "Let's take one of the studio." Bustling around the somewhat confused young man in the AM/shortwave studio, he cleaned off the console for the picture, then stepped aside as it was taken. "Now the FM studio," and he hurried to get Rosa and Juanita, another young female employee of the station, in the picture. The women cleared off a knitting project one had left on the FM console and giddily posed for the picture. "Caramba!"

We should have been sad to say goodbye to Radio Paz y Bien, but in the company of such a man as Padre Enrique, it is impossible to be sad for a moment. It was a gem of a station visit, but then the padre is a gem among men.

Door-to-door DXing is always adventurous, always fun, always new. In the end, it always seems to be the people at each station, like Padre Enrique, that make each visit unique, worthwhile and memorable.

Well, it's time to see what else Ecuador has to offer. Turn on those radios, and buena sintonia!! (good listening!!)

mt

DXing ECUADOR

- 3220 HCJB, La Voz de los Andes. What's this one doing here? I thought we said HCJB was easy. Well, this is the hard way to log HCJB, via a 10 kW transmitter, with programs in the Quechua language. This is one of the easier signals to hear on 90 meters, so when it's in well, go looking for the rare ones.
- 3240 Radio Antena Libre. As its name implies, "Radio Liberated Antenna" is a Catholic Liberation Theology station. It is one of the most rarely logged Ecuadorians, but try for it evenings and mornings.
- 3270 Ecos del Oriente. Another rare one, this time from the oil region of the Oriente.
- 3280 La Voz del Napo. Another Catholic station, this is the best heard 90 meter Ecuadorian after HCJB. Its schedule is 1000-0300, although sign-off is occasionally later.
- 3286 La Voz del Rio Tarqui is one of the smallest and poorest stations in Cuenca. Usually heard with folk music.
- 3290 The newest Ecuadorian on the shortwave bands is Ambato's Radio Centro. It's not strong, but is frequently heard in the mornings.
- 3315 El Puyo's taxi-driver owned station, Radio Pastaza, is one of those on-again, off-again stations. Lately it's been "on," so look for it around 1000 sign-on or evenings to is 0400 sign-off.
- 3325 Quevedo's Ondas Quevedanas has been inactive for several years. But who knows, it's been inactive before and could reappear anytime.
- 3395 Santo Domingo's Radio Zaracay used to be much better heard, but a new directional antenna for the Galapagos Islands isn't sending much signal our way these days. Still, it is sometimes heard.
- 4680 Radio Nacional Espejo is another on-again, off-again station in the "on" mode. This is one of Quito's most popular folk music stations.
- 4795 La Voz de las Caras. Recently inactive, this is one of the few stations in the Ecuadorian coast.
- 4800 Cuenca's Radio Popular is one of the oldest SW stations in Ecuador. The best time to hear this one is during one of their occasional all-nighters. It's usually covered by Guatemala.
- 4820 Padre Enrique Pesantez's Radio Paz y Bien can frequently be heard in the morning, before the Honduran station comes on.
- 4840 If Venezuela's Radio Valera is off the air, you might get lucky and log Ecuador's Radio Interoceanica, but it will take a lot of trying.
- 4851 Southern Ecuador's Catholic radio voice is Radio Luz y Vida, or "Radio Light and Life" in Loja. This one is better heard in the morning.
- 4870 Radio Rio Amazonas, Ecuador's other Protestant missionary station, is usually well heard at sign-on, which can vary from 1000 to 1100. Programming is in local Indian languages, and sometimes features some very unique music.
- 4890 Radio Centinela del Sur is Loja's on-again, off-again station. In one of its prouder moments, this station relayed the Apollo Moon landing via the Voice of America.
- 4900 La Voz de Saquisilí occasionally pops up here, but it's off the air more than it's on.
- 4920 Look for Radio Quito here mornings and evenings. Most programming is news, sports and other talk.
- 4960 Radio Federacion is the Catholic equivalent to Radio Rio Amazonas. It also broadcasts in the Amazon Indian language and plays their unusual music. Try for it mornings, or early evenings. Sign-off is 0100.
- 4977 Radio Tarqui is so popular in Quito, that in 1985 its owner was elected mayor! Unfortunately, it's very irregular on SW.
- 5030 Radio Catolica Nacional is easy to hear when Costa Rican Radio Impacto isn't using this frequency.
- 5040 Another Catholic jungle station is La Voz del Upano, scheduled from 1100-0300.
- 5050 Radio Jesus del Gran Poder is run by Franciscan monks in downtown Quito. Usually easy around 1000 or 0100.
- 5057 Loja's Radio Nacional Progreso is irregular, but strong when it's on. The morning folk music and ad program at 1000 is a good time to try.
- 7600 The Ecuadorian Navy operates HD2IOA, the local equivalent to WWV. Try for the time pips and Spanish time announcements during the evening.

uniden®

\$12,000,000 Scanner Sale

Uniden Corporation of America has purchased the consumer products line of Regency Electronics Inc. for \$12,000,000. To celebrate this purchase, we're having our largest scanner sale in history! Use the coupon in this ad for big savings. Hurry...offer ends September 30, 1990.

★ ★ ★ MONEY SAVING COUPON ★ ★ ★

Get special savings on the scanners listed in this coupon. This coupon must be included with your prepaid order. Credit cards, personal checks and quantity discounts are excluded from this offer. Offer valid only on prepaid orders mailed directly to Communications Electronics Inc., P.O. Box 1045 - Dept. UNID, Ann Arbor, Michigan 48106-1045 U.S.A. Coupon expires September 30, 1990. Coupon may not be used in conjunction with any other offer from CEI. Coupon may be photocopied. Add \$12.00 for shipping in the continental U.S.A.

RELH RH608B-A \$419.95
RELH RH256B-A \$294.95
Bearcat 800XLT-A \$229.95
Bearcat 210XLT-A \$184.95
Bearcat 70XLT-A \$139.95
Uniden HR2510-A \$229.95
Uniden HR2600-A1 \$239.95
Uniden PRO810E-A \$169.95
Uniden CARD-A \$164.95
Uniden RD3XL-A \$149.95
Uniden RD99GT-A \$114.95

★ ★ ★ VALUABLE COUPON ★ ★ ★

Bearcat® 760XLT-A

List price \$499.95/CE price \$254.95/SPECIAL 12-Band, 100 Channel • Crystalless • AC/DC Frequency range: 29-54, 118-174, 406-512, 806-956 MHz. Excludes 823.9875-849.0125 and 868.9875-894.0125 MHz. The Bearcat 760XLT has 100 programmable channels organized as five channel banks for easy use, and 12 bands of coverage including the 800 MHz band. The Bearcat 760XLT mounts neatly under the dash and connects directly to fuse block or battery. The unit also has an AC adaptor, flip down stand and telescopic antenna for desk top use. 6-5/16" W x 1-1/4" H x 7-3/4" D. Model BC 590XLT-A is a similar version without the 800 MHz band for only \$199.95. Order your scanner from CEI today.

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AM464-A Uniden answering machine \$49.95
AM488V-A Uniden answering machine \$49.95
AM480-A Uniden answering machine \$49.95
AM480-A Uniden answering machine \$69.95
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FP302-A Uniden feature phone \$49.95
FP320S-A Uniden feature speakerphone \$49.95
FP322S-A Uniden feature speakerphone \$59.95
XE570-A Uniden cordless phone \$74.95
XE422S-A Uniden cordless speakerphone \$109.95
XE777S-A Uniden cordless speakerphone \$109.95
BT100-A Uniden Trimstyle phone \$17.95
KT280-A Uniden Family phone with 911 feature \$29.95
FF150-A Uniden Executive phone \$39.95

RELH® RH256B-A

List price \$587.50/CE price \$299.95/SPECIAL 16 Channel • 25 Watt Transceiver • Priority The RELH RH256B is a sixteen-channel VHF land mobile transceiver designed to cover any frequency between 150 to 162 MHz. Since this radio is synthesized, no expensive crystals are needed to store up to 16 frequencies without battery backup. All radios come with CTCSS tone and scanning capabilities. A monitor and night/day switch is also standard. This transceiver even has a priority function. The RH256 makes an ideal radio for any police or fire department volunteer because of its low cost and high performance. A 60 Watt VHF 150-162 MHz version called the RH608B-A is available for \$429.95. A UHF 15 watt, 16 channel version of this radio called the RU156B-A is also available and covers 450-482 MHz, but the cost is \$454.95.

★ ★ ★ Uniden CB Radios ★ ★ ★

The Uniden line of Citizens Band Radio transceivers is styled to complement other mobile audio equipment. Uniden CB radios are so reliable that they have a two year limited warranty. From the feature packed PRO 810E to the 310E handheld, there is no better Citizens Band radio on the market today.

PRO310E-A Uniden 40 Ch. Portable/Mobile CB \$83.95
PRO330E-A Uniden 40 Ch. Remote mount CB \$104.95
PRO500D-A Uniden 40 Channel CB Mobile \$38.95
GRANT-A Uniden 40 channel SSB CB mobile \$166.95
PC122-A Uniden 40 channel SSB CB mobile \$119.95
PRO510XL-A Uniden 40 channel CB Mobile \$38.95
PRO520XL-A Uniden 40 channel CB Mobile \$56.95
PRO530E-A Uniden 40 channel CB Mobile \$79.95
PRO640E-A Uniden 40 channel SSB CB Mobile \$137.95
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★ ★ ★ Uniden Radar Detectors ★ ★ ★

Buy the finest Uniden radar detectors from CEI today. TALKER-A2 Uniden talking radar detector \$119.95
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RD9XL-A Uniden "micro" size radar detector \$144.95
RD27-A Uniden visor mount radar detector \$54.95
RD90GT-A Uniden remote mount radar det. \$109.95
RD99GT-A Uniden remote mount radar detector \$119.95
CARD-A Uniden credit card size radar detector \$179.95

Bearcat® 200XLT-A

List price \$509.95/CE price \$239.95/SPECIAL 12-Band, 200 Channel • 800 MHz. Handheld Search • Limit • Hold • Priority • Lockout Frequency range: 29-54, 118-174, 406-512, 806-956 MHz. Excludes 823.9875-849.0125 and 868.9875-894.0125 MHz. The Bearcat 200XLT sets a new standard for handheld scanners in performance and dependability. This full featured unit has 200 programmable channels with 10 scanning banks and 12 band coverage. If you want a very similar model without the 800 MHz band and 100 channels, order the BC 100XLT-A for only \$189.95. Includes antenna, carrying case with belt loop, nicad battery pack, AC adaptor and earphone. Order your scanner now.

Bearcat® 800XLT-A

List price \$549.95/CE price \$239.95/SPECIAL 12-Band, 40 Channel • No-crystal scanner Priority control • Search/Scan • AC/DC Bands: 29-54, 118-174, 406-512, 806-912 MHz. Excludes 823.9875-849.0125 and 868.9875-894.0125 MHz. The Uniden 800XLT receives 40 channels in two banks. Scans 15 channels per second. Size 9 1/4" x 4 1/2" x 12 1/2". If you do not need the 800 MHz band, a similar model called the BC 210XLT-A is available for \$178.95.

Bearcat® 145XL-A

List price \$189.95/CE price \$94.95/SPECIAL 10-Band, 16 Channel • No-crystal scanner Priority control • Weather search • AC/DC Bands: 29-54, 136-174, 406-512 MHz. The Bearcat 145XL is a 16 channel, programmable scanner covering ten frequency bands. The unit features a built-in delay function that adds a three second delay on all channels to prevent missed transmissions. A mobile version called the BC560XLT-A featuring priority, weather search, channel lockout and more is available for \$94.95. CEI's package price includes mobile mounting bracket and mobile power cord.

President® HR2510-A

List price \$499.95/CE price \$239.95/SPECIAL 10 Meter Mobile Transceiver • Digital VFO Full Band Coverage • All-Mode Operation Backlit liquid crystal display • Auto Squelch RIT • Preprogrammed 10 KHz. Channels Frequency Coverage: 28.0000 MHz to 29.6999 MHz. The President HR2510 Mobile 10 Meter Transceiver made by Uniden, has everything you need for amateur radio communications. Up to 25 Watt PEP USB/LSB and 25 Watt CW mode. Noise Blanker. PA mode. Digital VFO. Built-in S/R/MOD/SWR meter. Channel switch on the microphone, and much more! The HR2510 lets you operate AM, FM, USB, LSB or CW. The digitally synthesized frequency control gives you maximum stability and you may choose either pre-programmed 10 KHz. channel steps, or use the built-in VFO for steps down to 100 Hz. There's also RIT (Receiver Incremental Tuning) to give you perfectly tuned signals. With receive scanning, you can scan 50 channels in any one of four band segments to find out where the action is. Order your HR2510 from CEI today.

NEW! President® HR2600-A

List price \$599.95/CE price \$299.95/SPECIAL 10 Meter Mobile Transceiver • New Features The new President HR2600 Mobile 10 Meter Transceiver is similar to the Uniden HR2510 but now has repeater offsets (100 KHz.) and CTCSS encode.



BC760XLT
800 MHz.
mobile scanner
SPECIAL!

★ ★ ★ Extended Service Contract ★ ★ ★

If you purchase a scanner, CB, radar detector or cordless phone from any store in the U.S. or Canada within the last 30 days, you can get up to four years of extended service contract from Warrantech. This service extension plan begins after the manufacturer's warranty expires. Warrantech will perform all necessary labor and will not charge for return shipping. Extended service contracts are not refundable and apply only to the original purchaser. Warrantech does not have an extended warranty plan for handheld scanners. For mobile or base scanners, CB radios or radar detectors a 1 year extended warranty is \$19.99, two years is \$39.99 and four years is \$59.99. Order your service contract today.

OTHER RADIOS AND ACCESSORIES

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PS001-A Cigarette lighter cable for BC55XLT \$14.95
VC001-A Carrying case for BC55XLT \$14.95
AT054-A Replacement antenna for BC55XLT \$14.95
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TIC-A Techniques for Intercepting Communications \$14.95
RRF-A Railroad frequency directory \$14.95
EEC-A Embassy & Espionage Communications \$14.95
CIE-A Covert Intelligence, Elect. Eavesdropping \$14.95
MFF-A Midwest Federal Frequency directory \$14.95
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A70-A Base station scanner antenna \$34.95
USAMM-A Mag mount VHF ant. w/ 12' cable \$39.95
USAK-A 3/4" hole mount VHF ant. w/ 17' cable \$34.95
Add \$4.00 shipping for all accessories ordered at the same time.
Add \$12.00 shipping per radio and \$4.00 per antenna.

BUY WITH CONFIDENCE

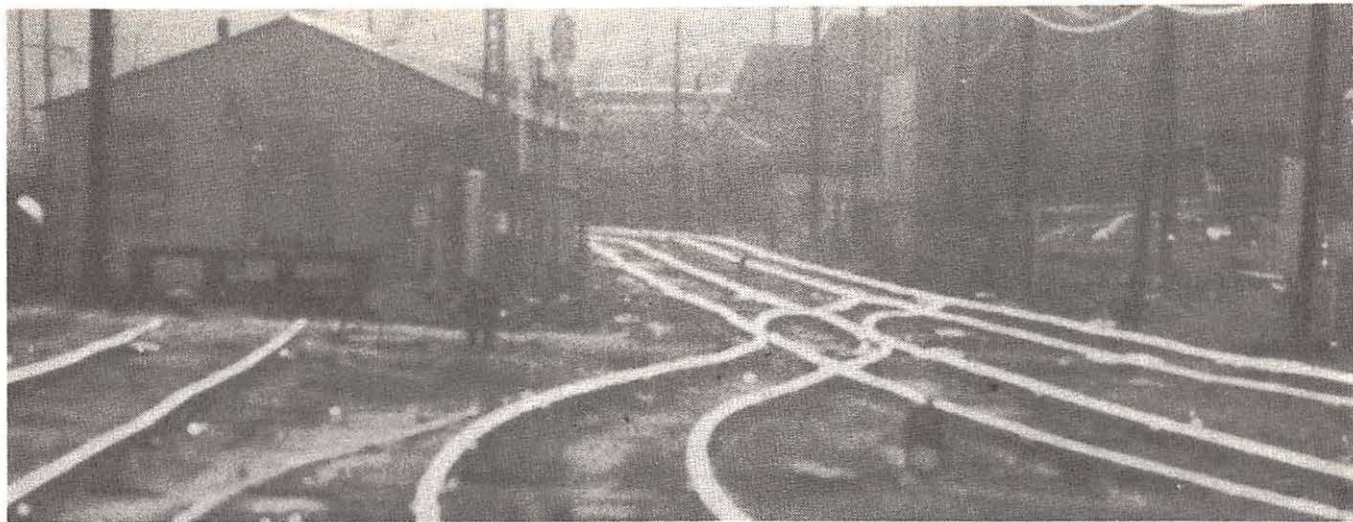
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An Ear to the Rails

Story and photos by Bruce K. Heald

"We hit a bulldozer! We hit a bulldozer!" The frantic call of the engineer over the railroad dispatcher's frequency brought me right up out of my chair.

I was working a booth at an outdoor industrial show and had been aware of the sound of a freight train passing behind the show grounds. The train had been moving slowly when I heard the train brakes being applied. And then came the engineer's frantic call over my scanner.

Railroading has come a long way since its beginnings early in the last century. Back then, a crude little wood-burning locomotive pulled two or three four-wheel cars along two wooden rails. Communication with a train wasn't really considered important. Each railroad only ran a few miles and only had one locomotive and a few cars. Ten miles an hour was considered fast! After the train left its point of origin, it wasn't heard from again until it returned.

As time went on, business picked up and operating more than one train became necessary. Some way had to be developed to keep trains from running into each other and also to get them by one

another. Some railroads built a side track at each station and erected a post half way between stations.

The first train to reach a half-way post had the right-of-way over any train they met from that point to the next station. The other train would have to back up to the last station and into the siding. This system produced some interesting confrontations and not a few cracked headlights.



Amtrack, Groton, CT

Potential problems such as a sticking brake can be detected by trackside or on-board sensors and the data transmitted directly to the crew, reducing the need for caboose or trackside employees.

The coming of the telegraph to railroading in the 1850s brought the first real means of communication with trains. A centrally located train dispatcher would use Morse code to send instructions and messages to trackside stations over a wire strung along the track from station to station.

The station agent would copy the instructions on a form that to this day is called a "train order." He would then give this to the train crew when the train arrived at his station.

Trains could now be held for the arrival of other trains or instructed to meet a train at a station several miles down the track. All manner of instructions could now be passed along to stations or between stations. The same basic communications system remained in use on railroads for more than one hundred years.

As the number of trains and their speeds increased, so did the need to keep trains moving. Someone came up with the idea of putting the train orders and messages on the end of a stick and having the station agent stand beside the track and hold the stick up so the train crew could grab the orders without stopping the train.

The first sticks used on most roads were bamboo with the end curved around into a hoop so that the train crew could lean out of the train and snag the hoop end with an out-stretched arm. While the bamboo hoop was replaced over the years with forked sticks in the shape of a "Y," the term "hooping orders" is still used on railroads today.

From my own long experience I can tell you that standing beside a track holding a train order "hoop" high in the air as a huge train comes by takes nerves of steel and no small degree of skill. You have to be close enough so the engineer can reach the orders tied in a string held across the open end of the fork, yet far enough back so you won't get hit.

Now throw in two or more tracks, rain, snow, ice, fog, dark of night, and the train-wire dispatcher's phone ringing off the hook behind you (more orders).

In the early years of affirmative action, I remember one female new hire who, being sent out to hoop up orders to a train, took one look at that train thundering down upon her, dropped the stick, ran for her car and was never seen again.

The movement of thundering trains through all kinds of weather and conditions was and is an intricate choreography that leaves no room for mistakes. I worked stations where some trains were scheduled to pass on the half minute. It remains drama at its best.

Listening in on all the action years ago required a knowledge of Morse Code and many a boy learned it just hanging around the station. After all, that's where the action was in most towns.

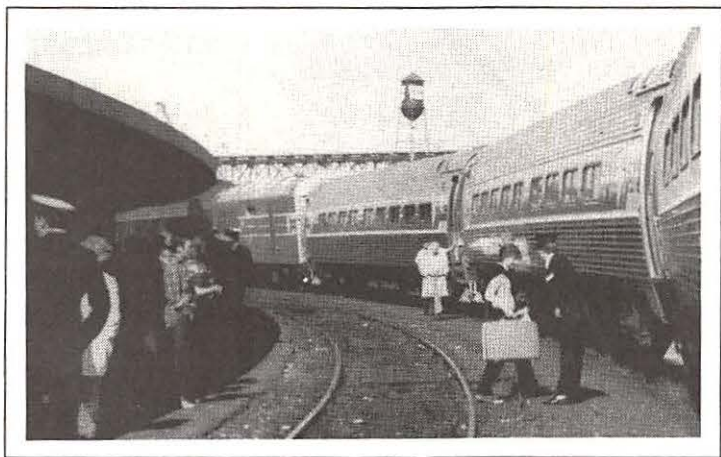
Morse gave way to voice in the 1950s on most U.S. railroads and putting on the agent's headset and listening in on the "train wire" became the privileged way for a boy to hear what was happening up and down the railroad.

The coming of reliable radio technology brought profound changes to railroad communications and operations in the late 1970s and 1980s. In railroad-ing today, the dispatcher talks directly with the train crew by radio as the train moves along the track. The stations and those who manned them for the most part are gone. Where they remain, hoops and hand and lantern signals are no longer needed. One just keys the mike. The action has moved from the train wire to the radio.



Boston & Maine, Bellows Falls, VT

Requiring nerves of steel, a station agent hoops up orders to the rear end; 1962

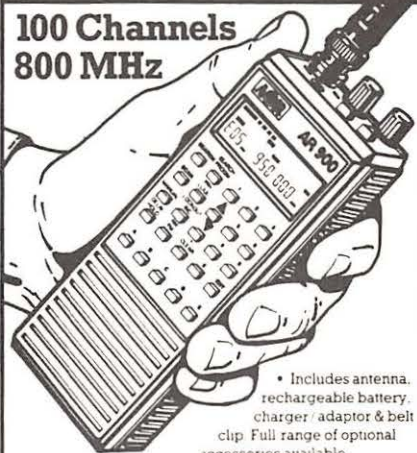


Amtrak, New London, CT

In busy stations, there is no room for mistakes; Radio has now largely replaced hand signals, flares, or locomotive whistles for communication.

New Scanner by AOR

100 Channels
800 MHz



- Includes antenna, rechargeable battery, charger/adaptor & belt clip. Full range of optional accessories available.

- Covers 27-54 MHz, 108-174 MHz, 406-512 MHz, and 830-950 MHz.
- 5 Scan Banks and 5 Search Banks.

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- 25 Day Satisfaction Guarantee. Full Refund if not Satisfied.
- No Frequencies cut out.
- Size 2" x 5 1/4" x 1 1/2" wt: 12 oz.

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Trackside electronic sensors monitor passing trains for defects and automatically transmit the results by radio (voice) to train crews, further reducing the need for trackside employees. On-train sensors transmit digital data (452/457.9375) over the length of long freight trains, eliminating the need for a caboose on most trains.

While members of a train crew used to communicate with each other by locomotive whistle, train line (air), and passing hand signals along the train with lantern and fuses (same as highway flares), now they generally just reach for the radio.

Today all the drama of the high iron is yours to hear on your scanner. Men and machines at their best, and sometimes worst, keep America and Canada rolling through all kinds of weather.

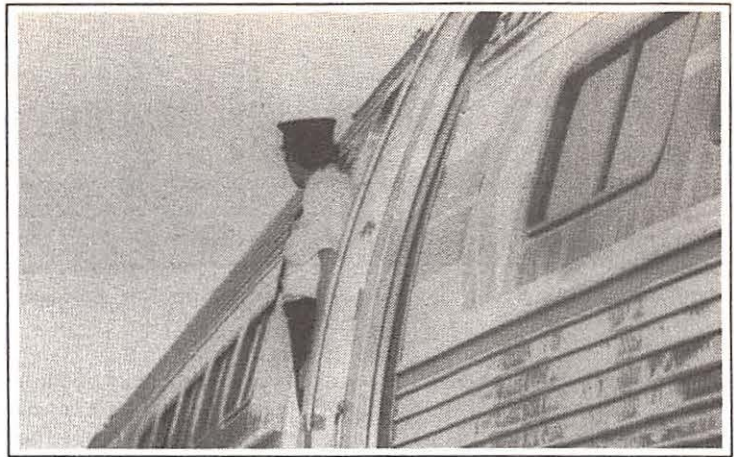
Mile-long freights pulled by 9,000 horsepower engines snake across the land. Intricate meets are made with faster or slower freight trains or fast passenger trains. Progress and problems are reported. Instructions given. Information traded. All by radio.

In large urban areas a constant stream of passenger trains move people in and out or through the city. Railroad stations and yards teem with activity. Trains come and go. Cars are switched in yards. The ever-present railroad police keep close eye on the activity with radios close at hand. Railroad managers communicate to assistants at trackside via telephone-radio patches (PBX). And you can hear it all!

Oh, yes, the bulldozer. Well, it turned out to be a front-end loader laying fiber optic cable along the main track for a subcontractor. The freight train was traveling at a train order restricted 20 MPH through the work area.

The front-end loader operator had returned early from lunch and, unknown to his employer, went back to work beside the main track. The railroad flagman normally there to protect him was, of course, still at lunch so he was working alone and unprotected. He did not see or hear the slowly approaching train and suddenly swung his bucket over the track directly in front of the train.

The loader operator managed to jump clear upon impact injuring little more than his pride. The front end loader was less fortunate. Rail service was quickly restored to normal. How do I know all this? Railroad radio. You can tune in on the action, too.



Amtrak, Mystic, CT

Once, a half-way flag gave the first arrival right-of-way to the track. Railroad management is still a tricky business. Here, a train awaits the highball.

Happy Monitoring.

mt

Bruce K. Heald is a third generation railroad man, author of the railroad frequency directory *Heald's Scan Rail* (\$9.95 from Heald, 6886 Jefferson St., N. Branch, MI 48461) and operates Heald's Frequency Search Service, advertised regularly in *Monitoring Times*.



Vermont Rwy, Rutland, VT

Since operations have moved to railroad, you can hear it all; listen in as the workmen reraill a wayward car.

TABLE I

A sampling of train dispatcher and train crew frequencies from major railroads across the U.S. and Canada:

- Burlington Northern
161.10, 161.16;
 - ConRail
160.80, 161.07;
 - Amtrak in the northeast
160.80, 161.07, 160.92;
 - Norfolk Southern (in former Southern Railway territory)
160.95, 160.245, 160.83;
 - Santa Fe
160.65, 160.56, 160.935.
- In Alaska:
161.355, 161.385.
- In Canada:
- Canadian National
161.415, 161.205, 160.935,
160.485, 159.81;
 - Canadian Pacific
161.475, 161.115, 161.325,
161.535.



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Minutes From
Washington, D.C.

NEW



R72A .1-30 MHz

- New State Of The Art Circuitry
 - Direct Digital Synthesizer (DDS)
 - 100dB Dynamic Range
 - All Mode AM, CW, SSB, FM (Opt)
 - Keyboard And Memory Entry
 - 101 Programmable Memory Channels
 - Tuning Steps—.1, 1, 10 kHz
 - Multiple-Action Scan Functions
 - Frequency Voice Synthesizer (Opt)
 - Computer & Cris Compatible
 - 24 Hour Clock—Recorder Start/Stop
 - Options CW Filter, 12VDC, CT17, CT16, CR64 More
 - Power 117, 220/240 50/60 Hz (12VDC Opt)
 - Size Only 9.5"W x 3.7"H x 9"D WT 10.6 LBS
 - EEB Options To Be Announced
- Sale Price And Delivery ... Call**

NEW



R100 .5-1000 MHz

- Advanced Wide Range Circuitry
 - Frequency Coverage Unbelievable
 - 120 Programmable Memory Channels
 - AM, FM and FM Wide (TV-FM Sound)
 - Multiple-Action Scan Functions
 - Keyboard Entry • Priority Channel
 - 24 Hour Clock/Timer-Power On-Off
 - Low Noise 15dB Pre-amplifier
 - Tuning Steps (<1-905 MHz) 1, 5, 8, 9, 10 12.5, 20, 25 kHz. >905-12.5, 20, 25 kHz
 - 3 Antenna Input Jacks
 - Power 13.8 VDC I AC Adapter (Opt)
 - ANF—Noise Limiter
 - 5.9(W) x 2(H) x 7.1(D) Inch 3.1 LBS
 - Selectivity (-6dB) FM 15, FMW 180, AM 6 kHz
- Sale Price And Delivery ... Call**

NEW

R1 .1-1300 MHz

- New Compact HiTech Circuitry
 - Unbelievable Size 1.9W x 4.0H x 1.4D (Inch)
 - No Handheld Ever With This Coverage
 - 100 Programmable Memory Channel
 - AM, FM, And FM Wide (TV-FM Sound)
 - Multi Scan-Programmed, Memory, Selected—More
 - Keyboard & Rotary Tuning (Not Found In Most Handhelds)
 - 11 Tuning Steps .5 To 50 kHz Dial Steps .1, 1, 10, 100 MHz
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- Sale Price And Delivery ... Call**



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CLASSIC



R71A .1-30 MHz

- World Class HF Receiver
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- Keyboard And Memory Frequency Entry
- 32 Programmable Memory Channels
- Optional Filters, Voice, 12VDC, Computer Input
- Many EEB Options Listed In Our 1990 Catalog
- 117/220/234 VAC 13.8 VDC (Opt)
- 11.25W x 4.44 x 10.9D (Inch) 16.5 Lbs

List \$999

EEB Discount Price \$849.95 + UPS

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Our FREE 1990 Catalog.**

CLASSIC



R7000 25-2000 MHz

- VHF/UHF Classic Nothing Like It Under \$4000
- Triple Conversion Eliminates Images
- Tuning Steps .1, 1, 5, 10, 12.5, 25 MHz Increments
- 99 Programmable Memory Channels
- Sensitivity Better Than .5µV (12dB SINAD) FMN
- Multimode AM, FM, FMN, FMW, CW/SSB
- Many EEB Options Listed In Our 1990 Catalog
- 117/220/234VAC 13.8VDC (Opt)
- 11.25W x 4.4H x 10.9D (Inch) 17.5 Lbs

List \$1199.00

EEB Discount Price 1019.00 + UPS

CLASSIC



R9000 .1-2000 MHz

- Never Has So Much Been Offered In One Receiver
- Covers Everything VLF (100 kHz) To Super UHF 2 GHz
- Multimode AM, FM, FMN, FMW, CW, SSB, RTTY
- 1000 Programmable Memory Channels
- DDS (Direct Digital Synthesizer) Tuning
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Scanning the Military Madhouse

by Laura Quarantiello

They are areas not visible to the naked eye. If you were to stand on the shore and look out on radar screens, however, their boundaries are marked by green lines.

Military warning areas border the three coasts of the United States. These sectors lie

in international waters, meaning that by law no government can claim authority over them. The United States Navy, however, does provide the air traffic control, and flights transiting these areas must deal with a FACSAC.

One of a million Navy acronyms, FACSAC stands for Fleet Area Control and Surveillance Facility and if you happen to live near one, you will want to tune in to some of the most intense naval activity in the country.

The U.S. Navy's fighter pilot community has a motto: "Train Like You'll Fight." Nowhere is that motto more aptly demonstrated than in our country's offshore military warning areas. Here, the best of the best active duty fleet squadrons come to hone their skills at air combat maneuvering, bombing runs, simulated missile firings and fleet war games. On the water, too, destroyers perform live artillery exercises, combat drills, mine-sweeping, and search and rescue drills in combination with aircraft carriers, submarines and other ships.

The radio action for a scanner buff is second to none. It is not uncommon to hear

F-14s, F/A-18s, A-6s, F-5s, F-16s E2-Cs and Navy and Marine Corp helicopters participating in round the clock fleet maneuvers.

Unlike military Prohibited and Restricted areas, which may be transited only with prior permission from the controlling agency involved, a Warning Area may be crossed without permission even though it is extremely hazardous. Aviation sectional charts depict warning areas by cross-hatched boundaries and call them Special Use Airspace. So, in addition to every breed imaginable of military jet, you may also hear civilian aircraft making their way through.

In the southwestern United States, the FACSAC facility is located near San Diego, California, and run by the Flight Combat Training Center at Point Loma where naval radar operators and combat intercept operators are trained. A virtual hub of naval activity for the west coast, San Diego's warning areas handle thousands of flights daily.

Also, a civilian company known as Flight International operates on contract for the

Table 1

FACSAC VHF/UHF FREQUENCIES

Eastern U.S.

Call sign "Giant Killer"

Located on Virginia Coast

VHF: 127.65 135.875 135.725 135.225

UHF: 233.7 350.0 251.6 310.1 249.8 255.0 338.1 305.0

HF (USB): 2252 4373

Southeastern U.S.

Call sign "Sealord"

Located near Jacksonville, FL; Beaufort, SC; Patrick AFB, FL

VHF: 120.95 134.65 135.925 135.825

UHF: 267.5 274.5 313.7 369.9

ATIS: 265.2

Gulf of Mexico

Call sign "Seabreeze"

Located near Pensacola, FL

VHF: 118.425

UHF: 313.2 275.6 303.4 280.7 383.8

274.2 306.8 346.5 353.2 385.2 382.0 362.8

HF (USB): 6835

Southwestern U.S.

Call sign "Beaver"

Located near San Diego, CA

VHF: 118.65 120.85

UHF: 285.7 289.9 272.6 266.9 314.7

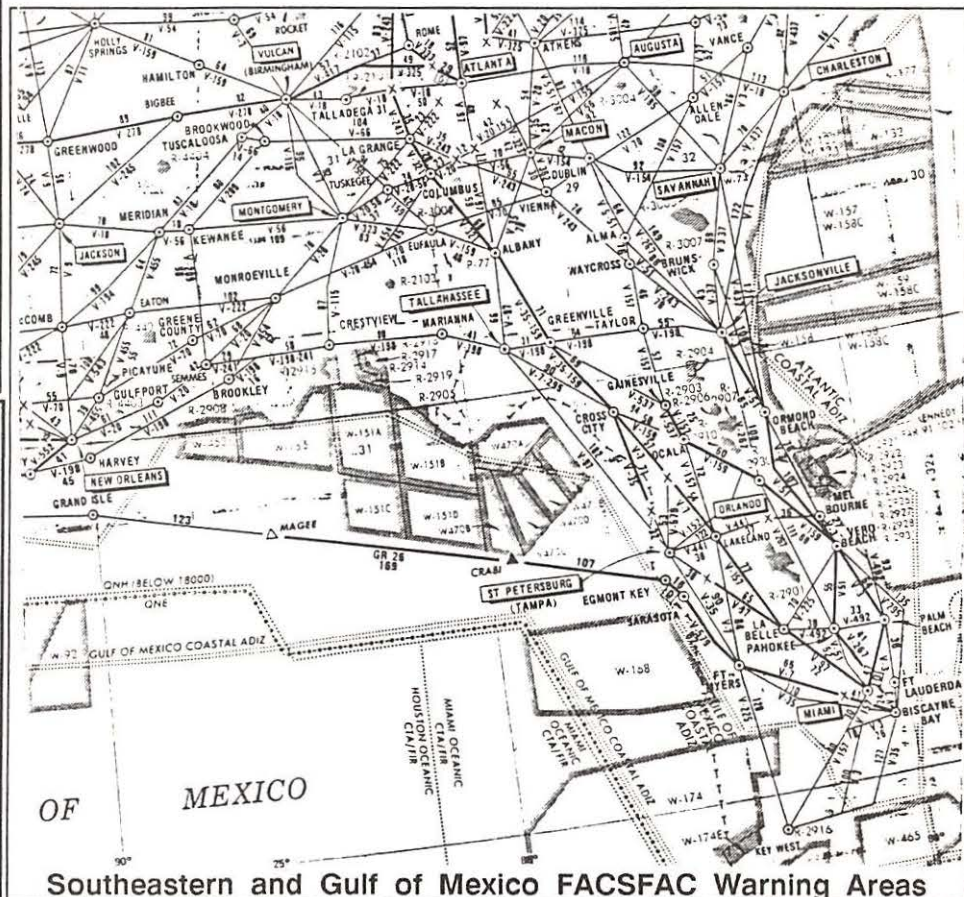
344.1 381..

ATIS: 282.0

Table 2

PACIFIC COAST FIGHTER SQUADRON FREQUENCIES

263.7	VF-1	Wichita
291.3	VF-2	Bullett
265.3	VX-4	Vandy
354.7	VC-12	Saint
254.5	VF-51	Screaming Eagles
250.2	VF-111	Old Nick
299.7	VF-114	Aardvark
253.1	VF-124	Gunslinger
275.5	VF-126	Bandit
250.2	VF-213	Blacklions
344.4	VF-301	Inferno
323.5	VF-302	Stallion
322.1	VF-24	Renegade
261.9	VF-211	Nickel



Navy, sending Learjets and Mitsubishi MU-2s into the warning areas of the southwest to act as radar "blips," tow targets for surface gunners, and simulated missile attack profiles, thereby saving the service twenty to thirty percent of what it would spend to send up a fighter pilot and his jet.

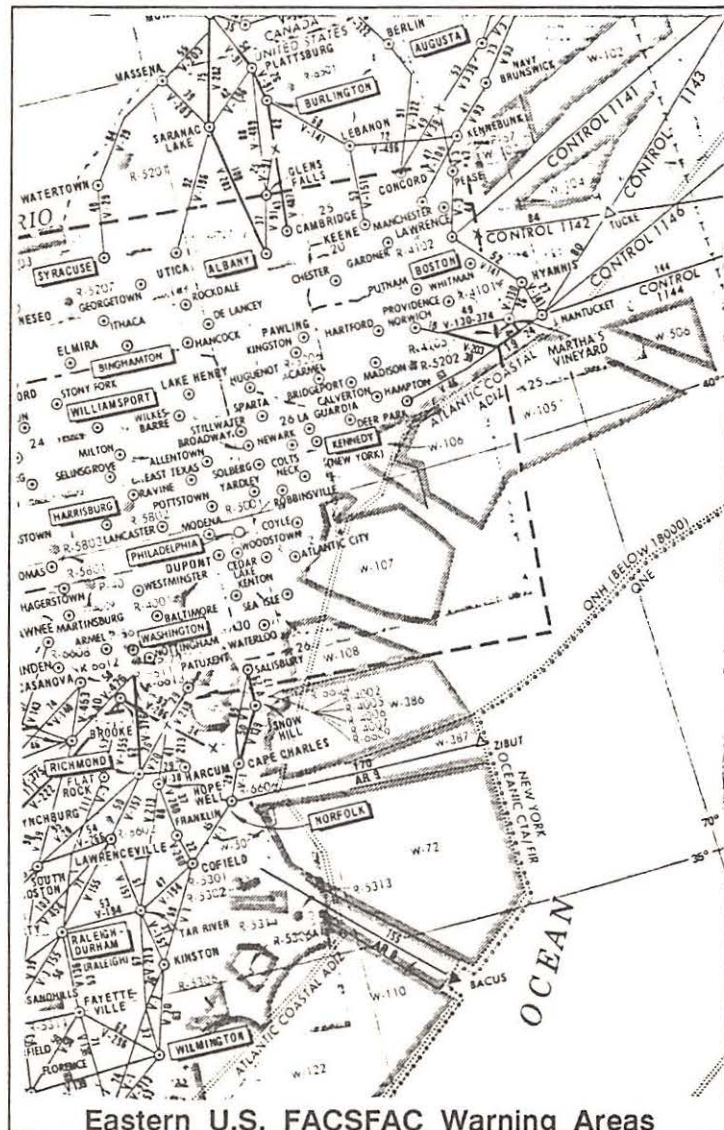
The FACSAC frequencies are alive from early morning to very late most evenings as flights with call signs like Aardvark, Shooter, Dragnet and Gunslinger fly their missions. Procedure calls for a flight entering one of the warning areas to make immediate contact with a FACSAC controller, who usually will have prior information on the type of aircraft in the flight and the mission profile.

A transponder code is assigned to allow the controller to track the flight by radar and the pilots are advised of any "hot areas" that will affect their route of flight. A hot area is usually a sector where live gunnery or missile exercises are taking place, often from the surface of the ocean up to fifty thousand feet.

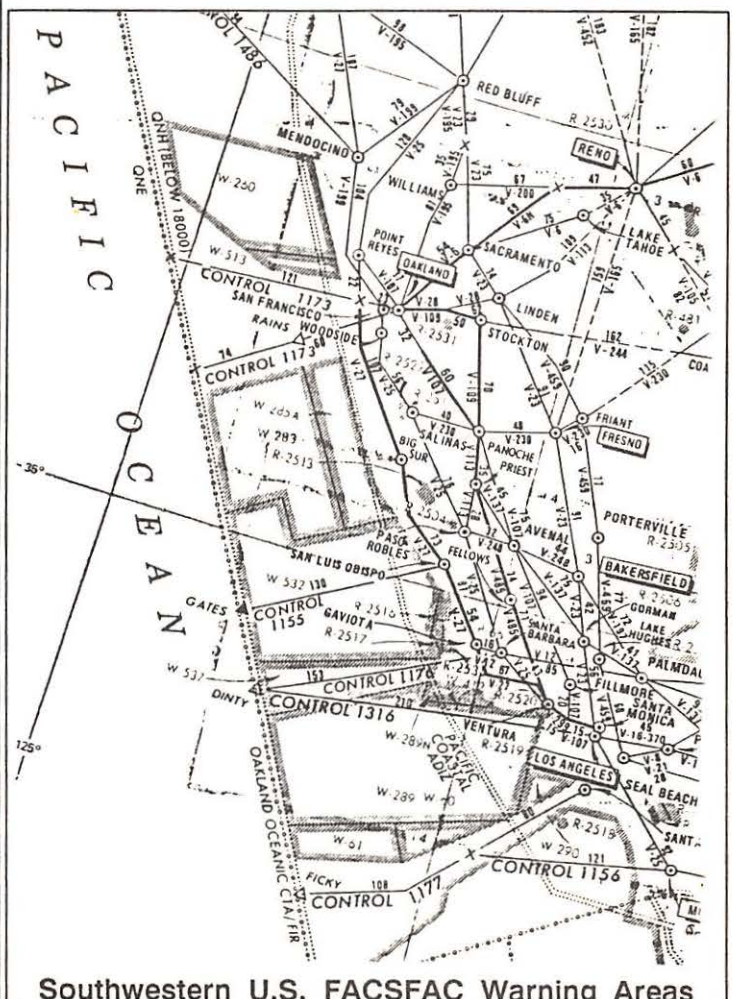
Once vectored to the area they will be working in, the flight is released to a tactical or discrete frequency and advised to keep a listening watch on primary for traffic calls and boundary advisories. It is common for pilots to unknowingly approach the fringes of their working areas in the hectic cockpit environment of air-to-air combat maneuvering.

Tuning in to the surface combatants working offshore can often complete the picture as ships and aircraft conduct war games in tandem. Either way, if you have a scanner and the inclination, it is a show not to be missed.

mt



Eastern U.S. FACSAC Warning Areas



Southwestern U.S. FACSAC Warning Areas

Table 3

NAVAL AVIATION JARGON

Angels	Altitude expressed in thousands of feet
Bingo	Low on fuel
Cherubs	Altitude expressed in hundreds of feet
Combat Spread	Basic fighting position assumed by a flight
Guard	Emergency radio frequency (121.5/243.0 MHz)
Hard deck	Preassigned altitude below which no aircraft is authorized to descend during an engagement
IFF	Identification Friend or Foe
Klick	Kilometer
Mike	Mile
No Joy	Negative contact with target
Nordo	Aircraft with no radio
Pigeons	Vector to a specific point or destination
Popeye	In the clouds
Playmates	Additional aircraft joining the exercise
RTB	Return to Base
Saddle	6 o'clock kill position behind an enemy
Squawk	Activate radar transponder
Strangle your parrots	Shut down radar transponder
Sweet lock	Good radar contact
Tallyho	Visual contact
VFR	Visual Flight Rules
Winchester	Out of ammunition

The Night the Plane Came Down

by Ed Hesse

I had fallen asleep early in the evening, but for some reason I became wakeful around 11 p.m. I reached over and turned on the bedside scanner. I'm a radio amateur, and the first "bank" of my PRO-2021 scanner is devoted to amateur radio repeater frequencies.

Even in the New York metropolitan area, 11 p.m. is not exactly "prime time" and it usually takes several minutes for the scanner to find an active QSO in progress. Not so this evening.

It stopped on 147.21, the repeater output frequency of the Larkfield Amateur Radio Club, a club of which I'm a member. There was a series of hurried transmissions, and at first it sounded like they were running an emergency drill.

Awful late for such a drill, I mused, and waited for the words that always popped up during such drills: "simulated emergency." It was quite a drill, I thought, about as realistic as an amateur's imagination could make it. They mentioned ambulances, fractures, bodies, and then a dreadful word -- triage. It sounded like Vietnam.



Of course, it wasn't simulated; it was real disaster. As the world knows, at about 9:34 that evening Avianca Airlines Flight 52 headed to John F. Kennedy International Airport from Colombia, and fell to earth in the sparsely settled, affluent community of Cove Neck, Long Island, about seven miles north of my home. It had run out of fuel.

At 9:45 p.m. -- eleven short minutes later -- a ham operator called in on the repeater with the first report that the plane had gone down. As luck would have it, the emergency coordinator for the Town of Huntington (Long Island), the home site of the repeater, was listening and immediately set the emergency radio network into action.

One ham took over as net control, one was dispatched to the crash site, and others were on their way to hospital posts. The years of drills were now being put to the acid test: a plane crash which ultimately would claim over 70 lives.

It was shortly after this that I awoke and tuned in to the real action. While AM radio broadcasts were giving brief reports that a plane had gone down on Long Island, scanner radio was bringing me to the site of the crash, to the area hospitals, to mobile volunteers frustrated by an immense traffic jam leading to the accident site, and to the homes of radio amateurs waiting to be called into action on the RACES and ARES services.

In relatively short time, hams were stationed at all area hospitals. The Larkfield repeater is in Suffolk County which adjoins Nassau County, the site of the crash. This caused no problem in that Nassau hams were quick to volunteer to staff Nassau hospitals while Suffolk hams did the same in their communities.

On-the-air reports came in one after

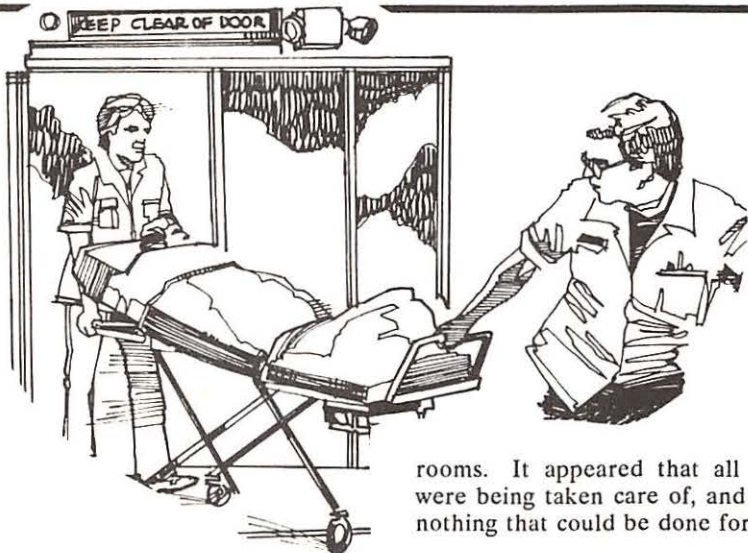


another that each hospital was ready, willing and able to take a specific number of casualties.

Meanwhile, at the site of the crash, a lone ham (WA2ZUO) who was the first on the scene, gave the listening world graphic reports of what was taking place in the aftermath of this horror. Jack would periodically call in the departure of ambulances, with number of casualties on board and their hospital destinations. Other hams at the hospitals would "roger" this information, with the assurance that hospital staffs literally at their elbows were waiting.

During one very brief quiet moment on 147.21, I let the scanner check other ham frequencies in the bank to see what was going on. It appeared that Larkfield, having been first on the air, was where the action was. Emergency coordinators on other repeaters were waiting for a call from civil authorities to activate, and this call never seemed to take place.

A quick scan of police and fire frequencies revealed activity, of course,



rooms. It appeared that all the living were being taken care of, and there was nothing that could be done for the dead.

I lay back on my pillow, wondering what had caused me to awaken and to listen to my scanner. I'll never know, but I do know that thanks to my interest in monitoring, I had a ringside seat to what took place exactly as it happened. I heard the anxiety in the voices, I heard the frustration, I heard the emotions, I heard the despair when a body was found and the joy when a child was still alive.

Best of all, it renewed my confidence in mankind. When the chips are down, people respond and the best in them comes out.

mt

If you have a story of how radio has played a part in your life or the life of your community, send it to Monitoring Times. If accepted for publication, we'll send you \$50.00. Manuscripts should be approximately 1,000 words and include at least one clear photograph.



with an interesting development taking place: so many volunteers (paramedics, for example) were responding on their own that the roads leading to the disaster site were seriously clogged.

The village of Cove Neck is accessible by one small road, and along this road were hundreds, possibly thousands, of vehicles -- primarily emergency -- which just couldn't get through. The word went out quickly: as much as you'd like to help, don't come and add to the congestion. Those already on the scene would do what had to be done.

And so into the early hours of the morning I stayed tuned to 147.21. It was where the action was. Other frequencies could give bits and pieces -- from the viewpoints of police, fire, and so forth -- but only on the amateur repeater frequency could I hear it all tied together.

It was only amateur radio that could quickly put a unit in a certain area where it could help coordinate emergency activities. It was only amateur radio which could bridge the large number of county, town and departmental "turfs" with an eye to helping those involved in the disaster. It was only amateur radio which could work dependably in situations where other communications bogged down due to clogged frequencies, "open" microphones, and cellular fade-outs due to terrain.

At about 1 a.m. activity on the repeater started to wind down. A very tired net control operator gladly relinquished his duties to a fresher operator. Ambulances were rolling into hospital emergency

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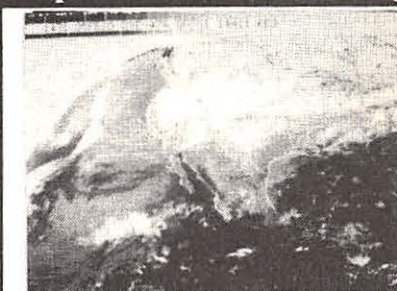
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SPECTRUM USAGE FEES HIT SHORTWAVE BROADCASTERS; Further Band Expansions Proposed

Without benefit of any public hearings, Congress has quietly established fees which the Federal Communications Commission must charge its licensees. International Broadcast Stations, previously exempt from fees, are now included. A new construction permit or facilities change will cost \$1705; a license \$385; license renewal \$95.

Now hold your hat for the clinker! The IBS have been selected to pay the first spectrum use fee levied for any FCC services, \$140 a year for each frequency-hour assigned or coordinated, totalling \$91,000 into the Treasury annually from all private stations, \$42,000 of which would come from WYFR's 300 frequency-hours daily alone. KNLS, with 10 frequency-hours daily, would pay \$1400 a year, all of which must be paid in advance.

To add insult to injury, the fees will not contribute to improved effectiveness by the FCC, which will not receive the money. VOA and Radio Free Europe/Radio Liberty are exempt. The FCC expects to implement this by May 21, 1990, after a rule making. Until then, American shortwave stations and the public have an opportunity to oppose these charges, which may be unconstitutional. I understand that the IBS has been chosen for this precedent because we are so few in number, and probably without the required resources to carry the issue to the Supreme Court. If unchallenged, this could be used against other FCC-licensed services as well. (George Jacobs, P.E.)

George Jacobs has also proposed to the FCC the following further expansions in world-wide shortwave broadcast allocations for consideration at the 1992 World Administrative Radio Conference, totalling a sesquimegahertz: 5850-5950, 7300-7750, 9350-9500, 11550-11650, 13800-13900, 15600-15700, 17450-17550, 18900-19300 kHz (*World of Radio*)

Now to this month's roundup of the most important DX and station news:

AFGHANISTAN Radio Afghanistan has expanded English to an hour at 1830 on 9635, 7215, 6020; also at 0930-1030 on 17720, 15250, 9635, 6085-variable, 4940 (BBC Monitoring)



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four hours to two, at 0800 and (except Mondays) 1500 on 11715 and 9750 respectively, changing May 7 from 9750 to 11700. Special weekend programming on Saturdays and Sundays is now more up-to-date, recorded during the prior week from a new center in Nashville, TN, replacing Canton, OH (Tim Coucke, KNLS)

AUSTRALIA Radio Australia has finally gone out-of-band (or into the expanded band areas): heard at 0700 on 21775, 17630 and 15465 (Dale Park, Honolulu, HI, *W.O.R.*) 15465 operates from 2100 to past 0600 when QRMoscow starts (Bob Padula,

ALASKA Some U.S. shortwave stations may have to cut back operations due to the FCC's new charges, but KNLS already reduced from 15 to 10 hours per day in order to install automation equipment. By September its "rather unique digital audio automation" should be in place. It's now on the air only between 0700 and 1700 UTC, with English cut from

Melbourne) Also at 0100-0900 on 17600 replacing 15395 (German reporter to *Sweden Calling DXers*)

BRAZIL Radio Bandeirantes found on 10061.31 kHz at 2344-0035 with full ID at 2359; good signal, but distorted; mentioned 6090 and 9645 but latter not heard (Terry Palmersheim, WA, *Fine Tuning*)

BYELORUSSIA Minsk-I heard on 7210 from 0300; local program from Grodno on 7140 at 0340 (Hans Johnson, GA, RCI *SWL Digest*) Now maybe one hour earlier.

CANADA RCI's share of the CBC budget cut starting April 1 is C\$578,000, left with C\$15.5 million. Five to ten jobs will be cut through attrition, early retirement; no targets eliminated but some program changes. The 0500-0600 weekday broadcast to Africa/Mideast is dropped. *SWL Digest* rescheduled, no longer on the Austria relay, and still not on any of the Asian relays. German got another last-minute reprieve, since start-up of the new Arabic service has been delayed (Ian MacFarland, RCI) See KOREA SOUTH

CHILE Another guess on the name of the new station on 5825: Radio Yungay Evangelica (Henrik Klemetz, *Play-DX*)

COLOMBIA Radiofusora Nacional on new 11821.4 at 0259 past 0405, classical music after 0330 (Roland Schulze, Germany, RCI *SWLD*) Same here at 2200 to 0500 or so with AM transmitter, parallel 17865.2 USB; don't confuse with third harmonic of La Voz de los Centauros on 17864.94, heard one day at 2230-2330 when Nacional was absent (Ernie Behr, Ont., *SWLD*)

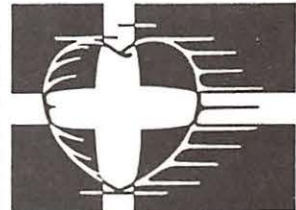
CUBA Radio Havana's DX program, UTC Sunday at 0240 and 0440 on 9710 and 11820, is hosted by amateur CO2KK, who seems to have good technical knowledge and is concerned about RHC signal quality. I suggest we send complaints about RHC spurs directly to him. He also mentioned that RHC has an official callsign: COCH plus the transmitter number (Ernie Behr, *W.O.R.*) The transmitters were made in Czechoslovakia; Cuba threw out the Radio Prague correspondent for suggesting that Cuba too would undergo political changes (BBC Monitoring)

Radio Rebelde on new 3383.7 around 1300, parallel 5035 (Chuck Bolland, FL, *SWLD*) And at 1100 (Kevin Atkins, AL, *FT*)

(non) La Voz de la Fundacion got Radio Clarin, Dominican Republic, to move from 11700 to 9950, but Cuba complained to the ITU that it had prior rights to 9950! -- not so, since the ITU doesn't handle out-of-band registrations. But the Dominican government caved in and ordered Clarin to switch to 9850, which has lots of interference in the evenings. Fundacion may try using it at 1200 instead, or find a way back to 9950. Meanwhile, La Voz de la Fundacion has started using the much more reliable WHRI, Indiana, at 1500-1600 (except Saturdays) on 15105, 21840; 0100-0200 on 7315, 9495 (Jeff White, FL, *Radio-Enlace*)

DENMARK (non) Radio Denmark is paying Norway 10.25 megacrowns Norwegian for relays, which is 5/11 of the total cost for transmissions. The agreement runs until 1993, when Denmark must decide whether to help pay for new Norwegian transmitters as the Fredriksstad site is closed down. Denmark may then build its own new station for 110 megacrowns Danish on the island of Aero.

RADIO DANMARK



DANMARKS RADIO



Revised spring schedule of Denmark via Norway until 5 May: (*=to North America) 0030 on 11865. 0130 on 15360, 9615*. 0230 on 9560*, 15360*. 0430 on 15170, 11925. 0630 on 9590, 15175. 0730 on 21730, 15165. 0930 on 25730. 1030 on 21730, 25730, 15165*. 1130 on 21640, 17780. 1230 on 21705*, 15165*. 1330 on 21710. 1530 on 15310*, 17765*. 1630 on 17765, 25730. 1730 on 9655, 15220. 2130 on 15165*, 11790. 2230 on 15180, 17705, 11930* (via Sven Ohlsson, Sweden, W.O.R.)

ECUADOR HCJB's English programming will undergo a major transformation Sunday, May 6, dropping some old programs, introducing new ones and retiming others. April's call-in is hosted by *Musical Mailbag*, on the 14th at 0730, 15th at 0200. Some *DX Partyline* topics: March 31/April 2, how two major stations report the news. April 7/9, KUSW and the RF-B65 portable. April 14/16, sunspots, Equatorial Guinea. April 21/23, Mississippi River station WJG, Arthur Cushen, Fred Vobbe. April 28/30, QSLing the Yemans, ANARC, EDXC, SPARC reports.

Ham Radio Today, Wednesdays 0800, 1030, 2130, UTC Thursdays 0200, 0600: March 28, RF ground, refraction, magnetism. April 4, transmuting, highest possible frequency, inductance. April 11, microsats, ionograms, inductance. April 18, surge protection, MUF and LUF, DC circuit basics. April 25, packet radio, ionosondes, DC circuit basics (HCJB) *H.R.T.* host joked that a new slogan for HCJB, "Here Comes John Beck" was turned down; catch him operating as HC1QH, Sundays on 28652.

GREECE ERT has filled the former gap at 0150-0200 with a special feature in English on cultural affairs of Greece, on 7430, 9395, 9420, though announced as 9425 (John Babbis, MD, W.O.R.)

HONDURAS Super Radio heard on 2nd harmonic 2500.2 kHz at 0627-0702 (Mike Bolitho, Paul Routenburg, Niel Wolfish, Ont., FT) Strong past 1200 on 2500.24 from San Pedro Sula (Chuck Bolland, FL, *DX Listening Digest*)

HUNGARY Radio Budapest has started test broadcasts in new languages on 6110, 15 minutes each: Romanian at 0400, 1700; Russian at 0415, 1715; Slovak at 0500, 1830; Serbo-Croat at 0515, 1845 (SCDX)

INDIA The Northeast Service from Shillong should not be referred to as All India Radio, heard in English at 1530-1559, quite strong on 3255 (John Bryant and Nick Hall-Patch, B.C., FT)

INTERNATIONAL VACUUM Recent court rulings make C-SPAN now feel free to carry VOA on its cable audio service, starting with *Daybreak Africa* at 0600-0700 UTC weekdays on channel 1 (via Malcolm Kaufman, W.O.R.)

ITALY Adventist World Radio plans to allocate \$7.5 million to build a powerful new station at Forli, replacing the present 10-kilowatt unit with 100 kW, and a second one later of 250 kW, perhaps with studios in San Marino. Buying time from RTE, Portugal, would no longer be necessary. AM transmitter would be added to reach Albania, and another on Sicily to reach Tunisia. After that, a new station in central Africa, and upgrading AWR in Costa Rica (Myron Widmer, AWR, via C. Eric Staehling, N6TMZ, Ukiah)



Verie from European Christian Radio, Ravenna, 6205, says 7 kW with log periodic beamed east, Sundays at 0730-0900 in English, German, Italian (Jerry Berg, MA, FT)

JAPAN Radio Japan has returned to 11865 at 1400, 1500, 1700, 1900; at 0500 on 15195, 17825 (*DX Corner*) Rika Kobayashi, host of the show, says it's expanded from 19 minutes to 24 starting in April (Bruce MacGibbon, OR)

JORDAN Radio Jordan has started a fortnightly *Electronic Dialogue* series, chats by satellite with Arab Americans; unfortunately times are not definite; listen for announcements. Some specific programs, at least through March and perhaps continuing, on the English relays before 1315 on 13655 and after then on 9560: *Jordan Weekly*, after the 1200 news on Saturday, Tuesday, Wednesday, Friday. *Arabs Outside the Arab World*, Saturday 1800, Sunday 1500. *Biographies of the Prophet*, Friday 1800-1830. Comedy (probably from BBC), Monday 1230-1300. *Science Report*, Sunday 1230, Wednesday after the 1600 news. *Jazz Hour*, Friday 2000-2100. Classical Music, Saturday 1830-1900, Monday 1500, Friday 2100-2200. *News Desk*, Sun-Thu 1700-1730 (via John Carson, OK)

KOREA, SOUTH Relays via RCI, Sackville, start April 2; those concerned that RCI is trading out too much of its prime-evening transmitter time will be pleased to note that Radio Korea has agreed to use morning hours only: 1000-1030 Spanish and 1030-1100 English on 11715; 1100-1130 Korean on 6145, 9650 (Radio Japan *DX Corner*, which said English and Korean are for western North America -- middle of the night -- and SCDX which says eastern NAm) The 1100-1130 broadcast on 6145 is in English (Koji Yamada, *DX Spread*)

MALTA Radio Mediterranean, 6110, no longer exists, per telegram from station (Roland Paget, France, SCDX)

MOLDAVIA Moldavian Radio First Programme, Kishinev, is heard on 6075 from 0315 to 1905, then 15360 until 2200; perhaps one hour earlier during summer (BBC Monitoring)

MONTSERRAT The Big RA, wiped out by Hurricane Hugo after Deutsche Welle had already decided to pull out, hopes to get back on 930 kHz as soon as possible, under the auspices of VOA by mid-1990, or of BBC which would take a year longer (Radio Netherlands *Media Network*) Nothing much said about reactivating the 50-kW shortwave transmitter.

Radio Antilles should be back by June thanks to the Montserrat government in cooperation with the Organisation of East Caribbean States (Carl Douglas, Trinidad, SCDX)

NETHERLANDS Some RN changes in English as of March 25: 0430 broadcast dropped. 0730 on 9630, 9715. 1130 on 21520. 0030 on 6020, 6165 and new 11740. 0330 on 6165 and 9590 (RNMN)

NETHERLANDS ANTILLES TWR's in-house nickname for its identification signal is "tingles" (*Bonaire Wavelengths*)

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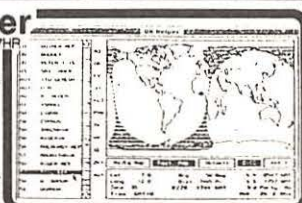
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Shortwave Broadcasting

NEW ZEALAND Despite its many published schedules, RNZ International operations have been quite variable, depending on cricket and other sports coverage; nominally on 17680 at 1700-2105, 2300-0105, 0300-0607; but one day closing at 1905 to return at 2100; Sunday opening at 1800. Sometimes stays on until 0700, and does not break when in the midst of cricket. *New Zealand Calling*, with Rudi Hill greeting various Pacific island countries, is heard weekdays after the 0400 news (Bruce MacGibbon, OR, W.O.R.)

Tony Cook's *Mailbag* program has resumed, including my DX news (Arthur Cushen) No time.

NIGERIA Voice of Nigeria plans to reactivate all its 500-kW transmitters immediately (BBCM) Would you believe, eventually?

PERU New stations have been monitored: On 4195 variable, announced as 4150, Radio Emperiar (or Emberiar?), in Casma, at 2300-0330. On 4750, Radio Auto Mio, in Rioja at 1100-2300 testing, formerly Radio Imperio (Hirotugu Nabeshima, Lima, *Radio Nuevo Mundo*)

PHILIPPINES Radio Veritas Asia has deleted its English services at 0130 and 1500, retimed south Asian languages (Alok Das Gupta, India, Radio Australia)

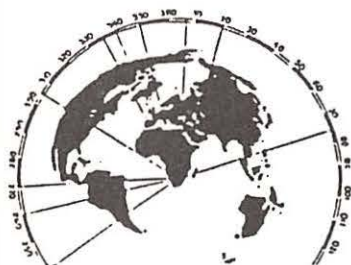
POLAND Radio Scandinavia's tests via Radio Polonia are to continue until mid-April, Saturdays at 1000-1100 on 9675; address is P O Box 14006, 20024 Malmö, Sweden (RNMN and BBCM) Saturdays at 1000-1115 in Swedish and English (Dario Monferini, Italy, *Play-DX*)

SOMALIA A blatant extortion letter received from Radio Mogadishu, 6790, saying it would QSL only for a tape proving reception and a \$50 processing fee by Amex card!! (Steve Reinstein, *DXSF* via *Play-DX*)

SOUTH AFRICA Though covered live on U.S. TV networks, Pres. De Klerk's news conference announcing the imminent release of Nelson Mandela was not broadcast live on Radio RSA; after it was almost over, they did mention an important announcement was expected. Their act was more together the next day, however, simulcasting the SABC-TV audio of the actual release (*World of Radio*)



Radio RSA in English until May 5: 1100-1200 on 25790, 11900, 11805. 1200-1300 on 21590, 11900, 11805. 1300-1400 on 21590, 17710, 11805. 1400-1600 on 25790, 21590, 21535 (to North America), 11925. 1800-1900 on 21535, 15230, 7230. 1900-2000 on 17765, 15230. 0200-0300 to North America on 15120, 11935, 9615, 9580.



SPAIN La Voz de las Canyas admitted it was a 100-watt pirate from Madrid, on 5067.9 kHz, once it had been direction-found to Spain by Henrik Klemetz, Sweden and Dario Monferini, Italy. The operators said the name came from a Spanish term for a mug of beer, since they came up with the idea while having a drink (*W.O.R.* and *Radio-Enlace*) And the station has supposedly closed down voluntarily, without being busted.

SRI LANKA Nidhas Handa (Voice of Freedom) on 5304 in Sinhala at 1330-1415, believed to be operated by the S.L. security forces, against the extremist rebel organisation JVP. Tamil National Broadcasting Station, 6740-variable, operated by the illegal Tamil national army in the northeast province, with connivance of Indian peace-keeping forces, 0130-0215, 1030-1115, sometimes also 1430-1515 (Sarath Weerakoon, Sri Lanka, *Oz-DX*)

SUDAN Radio Omdurman has been shadowing Radio

SPLA on 9550 and 11710 at 1300-1400; after 1400 Omdurman switches to 9540 to relay Radio Juba in English, into Arabic at 1430-1500 (BBCM)

USA With the resumption of DST April 1, look for *World of Radio* on WRNO one hour earlier by UTC: UTC Thursday 0030, 1530, 2300; Friday 0030; Saturday 0300, 2330; Sunday 2030, with some frequencies changed, chosen from: 15420, 13720, 11965, 7355, 6185.

April 1 was also the date chosen for VOA to drop six languages due to reduced funding: Greek, Turkish, Slovene, Uzbek, Laotian, Swahili, as announced by VOA Director Richard Carlson, who nearly lost his job when his boss, USIA Director Bruce Gelb heard about it, and ordered budget savings to be made elsewhere.

Fifty-seven people would have lost their jobs, including Chittavong Saly, who escaped to freedom after being jailed in Laos (Ruth Sinai, AP)

KJES update: The station confirms it is not on the air; difficult to get the necessary personnel, don't have the right transmitter and there are other technical difficulties, but hopes to reactivate as soon as possible. The good news: God is in control! (via Bill Flynn, CA, *DX Spread*)

WLW, 700, Cincinnati, active some days via a narrowband FM relay on 26450 kHz, for a few hours after 1500 (Hauser, AZ)

Lots of stations have been showing up on second harmonics: 2920, WXRQ Mt. Pleasant TN. 2840, WAOC St. Augustine FL. 2820, WEGO Concord NC. 2760, WTVR Richmond VA. 2740, WLTC Gastonia NC. 2720, WMOV Ravenswood WV. 2680, WYCD Washington DC. 2660, WVCV Tallahassee FL. 2220, WBT Charlotte NC. And 1720, WOAY Oak Hill WV, mixing with Radio Clarin, Dominican Republic around 0200 (Don Moore, Big Rapids MI, *W.O.R.*)

USSR During unrest in Azerbaijan, an unnamed Soviet service in Azeri broadcasting Garbakhof's speeches used up to eight frequencies at once, 23 hours a day at 0000-2300, including: 17835, 17700, 17665, 15480, 15470, 15180, 12045, 11690, 9715, 9615, 9540, 7350, 7340, 7295, 7255, 7210, 7200, 7105. (BBCM) Look for more such operations during eruptions of violence in Soviet republics.

Read much more about shortwave and other media in REVIEW OF INTERNATIONAL BROADCASTING and DX LISTENING DIGEST. Samples in North America are \$2 each, elsewhere 7 IRCs or US\$3. Ten-issue subscriptions US\$21 each, or both for US\$40. Overseas airmail, US\$27, US\$29 or US\$31 depending on the distance; remittances must be in US\$ and on a US bank, or by postal money order, to Glenn Hauser, Box 44164-MT, Tucson, AZ 85733, USA.

Also monitor Glenn's DX news reports weekdays on RCI SWL Digest; Fridays in Spanish on Radio Nederland's Radio-Enlace; contributions to Austrian Shortwave Panorama, Sunday mornings; and the weekly half-hour WORLD OF RADIO on WRNO (see USA), and on Radio for Peace International, Costa Rica: Friday 2000, 2330; Saturday 0315, 0645, 1930; Sunday approx. 0130, 0700; Tuesday 2230; Wednesday 0200, 0545, on one, two or three of: 7375, 13660, 21566, 25947.



VOA QSL from John Flake, NC

Broadcast Loggings

Let other readers know what you're enjoying. Send your loggings to **Gayle Van Horn**, c/o Monitoring Times.
English broadcast unless otherwise noted.

0027 UTC on 17815

BRAZIL: Radio Cultura. Portuguese. Pops and instrumental music. ID and frequency quote at 0031 and 0102 UTC. Fair reception quality. (Robert Landau, Secaucus, NJ) (Sam Wright, Biloxi, MS)

0045 UTC on 15575

SOUTH KOREA: Radio Korea. Commentary on trade relations with Japan and activity of U.S. forces stationed in South Korea. (Robert Hurley, Baltimore, MD) Audible on 9750 kHz at 1426 UTC. (John Carson, Norman, OK)

0100 UTC on 11710

ARGENTINA: RAE. Spanish. Station ID, "Radio Nacional de Argentina." News and Argentine music program. (Robert Hurley, Baltimore, MD) (Nick Terrence, Huntington, NY)

0100 UTC on 11820

CUBA: Radio Havana. "News Roundup" and "North American Landscape" shows. Announcer duo discusses the Cuban view of the Washington-Pan American Congress of the 1880s. (Robert Hurley, Baltimore, MD)

0105 UTC on 4820

HONDURAS: La Voz Evangelica. Spanish. Latin tune to canned station ID at 0108 UTC. Religious programming and commercials. (Nick Terrence, Huntington, NY)

0128 UTC on 11735

YUGOSLAVIA: Radio Yugoslavia. Special feature on leading Yugoslavian "Womens Magazine." (John Carson, Norman, OK)

0130 UTC on 11580

USA: VOA. Report on UNICEF and emphasizing the need for immunization against measles and tetanus in poor nations. (Robert Hurley, Baltimore, MD) (D.R. Media, Houston, TX)

0130 UTC on 7430

GREECE: Voice of Greece. Newscast followed by discussion on air pollution problems in Athens. Station ID and Greek folk tunes. (John Carson, Norman, OK)

0200 UTC on 9580

SOUTH AFRICA: Radio RSA. Special feature of recent current events and developments in South Africa. Parallel frequency 9615 kHz also audible with clear quality. (Keith Simon, Winnie, TX) (D.R. Media, Houston, TX)

0247 UTC on 5997

NICARAGUA: La Voz de Nicaragua. Spanish. Sandinista songs and comments on Panama, Ortega and Nicaragua. Moderate to good reception to 0305 UTC. (Robert Landau, Secaucus, NJ)

0300 UTC on 11695

CHINA: Radio Beijing. Chinese students discuss their schooling in the U.S. "Business Show" program and comments on the rise of computer crime in China. (Harry Johnson, Ocean City, MD) Monitored on 11840 kHz at 0520 UTC. (John Carson, Norman, OK)

0325 UTC on 3215

SOUTH AFRICA: Radio Oranje. Afrikaans. Pop music program featuring artists Teresa Brewer, John Denver and New Vaudeville Band. Fair quality with severe static! (Robert Hurley, Baltimore, MD)

0412 UTC on 9445

TURKEY: Voice of Turkey. Featured programs, "Last Week" and "Masterpieces in Turkish Museums." Brief comments on the Turkish Aviation Institution, and folk music program (Keith Simon, Winnie, TX)

0455 UTC on 7370

TURKEY: Turkiye Polis Radyosu. Turkish. Station sign-on with interval signal, Turkish national anthem, and ID. Signal quality deteriorated rapidly during folk music program. Not heard often, last time noted on 6340 kHz.-ed.

0500 UTC on 4765

CUBA: Radio Moscow-All Union Radio relay. Russian. Interval signal and "Govorit Moskva" ID. "Moskovskoye vremya, vosim chasov" (Moscow time is eight hours). Newscast with main items on Gorbachev, an Aeroflot crash in the Urals, and a rocket attack at Kabul's airport. Heard on parallel 7400 kHz. (Garie Halstead, St. Albans, WV) *Greatlog!-ed.*

0509 UTC on 4890

GABON: Radio France Int'l relay. French. Program "Afrique Matin" (Africa Morning). First item about the mercenary, Bob Denard, and his work in the Comoros. Continued African news items and music to ID at 0513 UTC. (Garie Halstead, St. Albans, WV) (D.R. Media, Houston, TX)

0536 UTC on 7255

NIGERIA: Voice of Nigeria. International news topics and commentary promoting good health. National news of Nigeria and station ID. (John Carson, Norman, OK) (Sam Wright, Biloxi, MS)

0600 UTC on 4915

GHANA: GBC. Special message to the people of Ghana, delivered by the Deputy Foreign Minister of Afghanistan. Both countries hope Afghanistan will set up a Diplomatic Mission in Ghana. (Garie Halstead, St. Albans, WV)

0755 UTC on 7375

COSTA RICA: Radio for Peace Int'l. "Caribbean Magazine" features news from the U.N. and South Africa. Station ID and Hauser's DX show. (Jerry

Witham, Keaau, HI) (John Carson, Norman, OK)

0815 UTC on 3235

PAPUA NEW GUINEA-New Britain. Radio West New Britain. Pidgin. Entertaining DJ segment with a great musical variety of local island, country and western, rock, military, and bagpipe tunes. PNG local time check and commercials. (Jerry Witham, Keaau, HI)

0905 UTC on 6030

BRAZIL: Radio Globo. Portuguese. Globo promotional at tune-in and musical jingles. Portuguese pop vocals and commercials.-ed.

0930 UTC on 3290

PERU: Radio Tayabamba. Spanish. Excellent South American music program with brief break for "Radio Tayabamba" ID at 0938. (Frank Mierzewski, Mt. Penn, PA)

1120 UTC on 3378

AUSTRIA: SDOB. German. Austrian Army Training Network with easy-listening music. Male/female duo with newscast and station IDs. Signal quality plagued with Morse-code interference. (Frank Mierzewski, Mt. Penn, PA)

1141 UTC on 17650

FRENCH GUIANA: Radio France Int'l relay. French. A program for mariners with North Atlantic weather conditions. Area of Gascogne mentioned several times and believed to be a reference to Le Golfe de Gascogne (or the Bay of Biscay). Lady closes program with "Bonne Journee" or "Good Day." (Garie Halstead, St. Albans, WV)

1150 UTC on 9960

VENEZUELA: Radio Rumbos. Spanish. Locally produced commercials with phone number. Signal chimes space ads and ID given as "Rumbos" at 1159 UTC. (Nick Terrence, Huntington, NY)

1151 UTC on 4875

CHINA: Voice of Jingling. Chinese. Lady with program text and classical violin music. Two-toned time pips at 1200 UTC, with ID in Chinese. Weak signal with moderate interference. (Nick Terrence, Huntington, NY)

1151 UTC on 3325

GUATEMALA: Radio Maya de Barillas. Spanish. Male announcer presents local music. "Radio Maya" ID and upcoming program details at 1200 UTC. (Frank Mierzewski, Mt. Penn, PA)

1200 UTC on 9965

GUATEMALA: Radio Calman. Spanish. Signed on at 1200 UTC with tune of "The Angels Sing," and continued with "American Big Band Sound of the 1950s." "Calman" ID at 1206 UTC. (Nick Terrence, Huntington, NY)

1202 UTC on 3360

GUATEMALA: La Voz de Nahuala. Spanish. Lady with religious music, station ID and featured religious programming. (Frank Mierzewski, Mt. Penn, PA)

1400 UTC on 21530

PORTUGAL: Radio Liberty. Dari. Afghan Service starting with indigenous musical intro and ID. "Inja Radlo! Afghanistania azad ast." Opening announcement and brief Koran recitations, into talk on Azerbaijan. Some splatter from RSA on 21535 kHz. Audible on 17770 kHz. Preceding 30 minute program in Pashto. (Garie Halstead, St. Albans, WV)

1624 UTC on 25850

DENMARK: Radio Denmark. Danish/English. Choral music to multilingual IDs at 1625 UTC. Danish anthem and sign-off at 1626. (Harold Frodge, Midland, MI) Monitored 1315-1327 kHz. (Frank Mierzewski, Mt. Penn, PA)

2100 UTC on 17735

OMAN: Radio Oman. Arabic. Male announcer presents an Islamic talk from the Koran on the importance of prayer each day. Station ID in English. (Garie Halstead, St. Albans, WV)

2120 UTC on 4850

CAMEROON: Cameroon RTV Corp.-Yaounde. French. Native African music vocals to 2130 UTC. English pop tunes and highlife selections. (Harold Frodge, Midland, MI)

2125 UTC on 4895

COLOMBIA: La Voz del Rio Arauca. Spanish. Extended local news and announcements. Spanish rap music to station promos at 2150 UTC. (Harold Frodge, Midland, MI)

2125 UTC on 5004

EQUATORIAL GUINEA: Radio Nacional. Spanish. Editorial text to "Bata" ID at 2130 UTC. (Harold Frodge, Midland, MI) (Robert Landau, Secaucus, NJ)

2150 UTC on 9385

ISRAEL: Rashuth Hashidur. Hebrew. Lady announcer presents easy-listening and North American popular hits. Station ID and newscast at 2200 UTC. (Frank Mierzewski, Mt. Penn, PA)

2152 UTC on 4870

BENIN: ORT Du Benin. French. African highlife music to station ID. Station commentary to 2152 UTC. (Harold Frodge, Midland, MI)

2223 UTC on 7416

PIRATE: Hope Radio. Banjo/bluegrass music program mixing with co-channel pirate. (Harold Frodge, Midland, MI)

2235 UTC on 15154.6

INDONESIA-Java: Radio Republik Indonesia-Jakarta. Indonesian. Exercise show -- by radio! Announcements and featured interviews to interval signal at 2258 UTC. (Robert Landau, Secaucus, NJ)

2348 UTC on 2390

MEXICO: Radio Huayacocotla. Spanish. Male/female announcer duo present Mexican ballads and campesino music to announcement break. (Harold Frodge, Midland, MI) Monitored from 0100-0120 UTC with IDs noted as "Radio Huayacocotla, la voz de los campesinos." (Sam Wright, Biloxi, MS)

Utility World

Larry Van Horn

c/o MT, P.O. Box 98
Brasstown, NC 28902

I really do enjoy the thrill of listening to the shortwave Utility World bands and one of my favorite areas to listen to is the aeronautical frequencies. These areas of the HF ("High Frequency, another name for shortwave) spectrum can provide some of the most fascinating communications to be heard in the Utility World. Jetliners, private aircraft and even the military fly-boys can all be heard within the confines of the aeronautical bands.

I know I have said this before, but the aeronautical bands can also offer the hard core DXer some of the best DX to be heard in the shortwave spectrum. Most stations are even good verifiers.

So where do we get started? First, let's identify the spectrum of interest. Just where does all this flying and talking take place? Check out Table 1 for the answer.

Now I will be the first to admit, especially when you talk about military communications, that Table 1 does not represent the total picture. Military communications can pop up just about anywhere. The frequencies, however, in Table 1 represent assigned spectrum as defined by the international regulating body for communications, the ITU in Geneva, Switzerland.

What are you going to hear in these aero bands? The most common communications you will hear are ground stations controlling aircraft much like your local airport's control tower does.

The major difference between the two is that positive radar contact cannot be established so the ground stations rely on the aircraft to report their positions periodically. The ground stations can then keep track of all the aircraft within their airspace of responsibility and keep the aircraft from finding each other the hard way.

The world has been divided into Major World Air Route Areas (MWARA) for better control of aircraft. These areas are:

Caribbean	CAR	North Atlantic	NAT
Central East Pacific	CEP	North Central Asia	NCA
Central West Pacific	CWP	North Pacific	NP
East Asia	EA	South America	SAM
Europe	EUR	South Atlantic	SAT
Indian Ocean	INO	Southeast Asia	SEA
Middle East	MID	South Pacific	SP

Now whole families of frequencies are assigned to these NWARAs. Sometimes the area is so large that it is further divided into smaller areas and assigned its own family of

frequencies. The North Atlantic and Africa are prime examples where this is done.

Listening to the North Atlantic communications is usually where most beginners start. These comms are usually the best heard and appear on a variety of frequencies throughout the spectrum. With a little good luck and favorable propagation, it is possible to follow a flight from the time it first passes the coast of the eastern United States and establishes HF ground communications to its last transmission before changing to VHF for Europe. Westbound flights can be heard in a like manner coming from Europe.

When you first start listening, things are going to sound a little strange and you probably won't understand a thing that is said. That's okay; stay on it for a while. You will get used to the flow of communications after a while and before you know it, you will become a North Atlantic pro.

The most common thing you will hear is position reports. Remember, earlier I said that there is no radar, so the controllers on the ground rely on the aircraft's reported position to keep track of all the aircraft. A typical report might sound something like this:

*New York, Iberia 964 over 33 North 60 West at 0030.
Estimating 34 North 40 West at 0130. 35 North 40 West
next.
Flight level 350, Fuel remaining 54.3, Temperature -47
Celsius,
Winds 250 at 14.*

Now just what was said? Well, Iberia Airlines 964 called New York ATC to report his present position of 33 north and 60 west. You can now go to a world map and over the Atlantic plot that position. At 0130 UTC he will be at 34 north 40 west. The reporting position after that will be at 35 north 40 west. The aircraft is at flight level 35,000 feet. The reference to fuel indicates that the aircraft has 54.3 tons of fuel remaining in his tanks. The outside air temperature as measured by the aircraft at that altitude was -47 degrees Celsius. Finally, the winds as measured by the aircraft at 35,000 feet were blowing from 250 degrees at 14 knots. Now that really wasn't hard, was it?

This is just one example of the types of communication you will hear on aero frequencies. One way to get used to it is to use a tape recorder; tape the comms for later playback. You can keep playing back those sections you don't understand repeatedly until you figure it out.

There is another great aid to help in listening to aero comms and that is Robert Evans' new book, *The Aeronautical Communications Handbook, HF edition*. This one book has it all. Major chapters cover all aspects of listening to HF comms including:

- Commercial Aero Concepts (makes the technical easy)
- Commercial HF Communications
 - Flight Service Stations/ATC; LDOC Stations; VOLMET Stations
- CW Aero Communications
- RTTY Aero Communications
- Noncommercial Aero Communications
 - CAP/Aero Flight Test/NOAA Hurricane Hunters; US Coast Guard Comms; DEA Comms; NASA Comms;

TABLE 1
Utility World Aeronautical Bands

2850.0 - 3025.0	Civilian	10005.0 - 10096.0	Civilian
3025.0 - 3155.0	Military	11176.0 - 11270.0	Military
3400.0 - 3500.0	Civilian	11270.0 - 11400.0	Civilian
4650.0 - 4700.0	Civilian	13200.0 - 13260.0	Military
4700.0 - 4750.0	Military	13260.0 - 13360.0	Civilian
5489.0 - 5680.0	Civilian	15010.0 - 15100.0	Military
5680.0 - 5730.0	Military	17900.0 - 17970.0	Civilian
6525.0 - 6683.0	Civilian	17970.0 - 18030.0	Military
6683.0 - 6765.0	Military	21870.0 - 22000.0	Civilian
8815.0 - 8960.0	Civilian	23200.0 - 23350.0	Civilian/
8960.0 - 9040.0	Military		Military

Military Flight Communications
Aero QSLs and Reception Reports
Master HF Voice Listing by Frequency
City/Country Gazetteer

The best part of this book is that Robert has taken actual transmissions heard on the aero bands and explained each in detail. In fact, the comms I used preceding this came from Robert's book and is just one example of the many types he discusses that can be heard in the aero bands.

This book is a classic and no HF listeners who call themselves ute monitors should be without it in their shacks. The beginner as well as the old pro will find this book useful. I keep it right next to the radio and use it constantly. This one has it all on aero comms and has the Utility World seal of approval.

The book is available from DX Radio Supply, P.O. Box 360, Wagontown, PA 19376 for \$19.95 plus 1.55 book rate or 2.80 UPS. Now fly, don't walk, to get your copy of *The Aeronautical Communications Handbook*.

Oh, yeah, almost forgot, since I used an example of North Atlantic aero comms, let me give you the frequencies to listen in on so you can catch some of the action. Table 2 lists the North Atlantic family of aero channels and their stations.

If you are interested in seeing more of the MWARA worldwide list, drop me a line at P.O. Box 98, Brasstown. I will be happy to run a few more of these in the column if interest is there.

New Marine Coastal Stations

Faithful *Monitoring Times* Ute World reporter Geoff Halligey recently supplied some information on new coastal marine stations that have appeared since the start of the New Year. Geoff got the information from the British Admiralty List of Radio Signals. Many thanks, Geoff, and you might let us all know how to get hold of that useful marine band publication and the cost involved.

LSD 836 Argentina Radio: 34.38 S 58.28 W

USB transmits	4419.4	6521.9	8780.9	13162.8
	17294.9	22658.0		
SITOR A transmits	4350.5	4351.5	4352.5	6494.5
	6497.0	6501.5	8706.5	8707.5
	8708.0	13093.5	13094.0	13094.5
	17199.0	17217.0	17219.0	22580.0
	22591.5	22583.0		

9PG23 Black Star, Tema, Ghana: 05.38 N 0.00

CW transmits	4344	8700	12755	16948	22522
SITOR A transmits	4350	8705	12970.5	16900.5	22592

2PC Penta Comstation, NSW, Australia: 33.24 N 151.24 E

USB transmits	2032	2182	2524 (pri)	4419.4
	4143.6	4483 (pri)	6221.6	6521.6
	8291.1	12429.2	16593.3	

Thanks for the list, Geoff, and we'll be looking forward to more as new stations are addressed in the Admiralty List.

SELCAL List Revisited

Boy, get one address wrong, and the whole world writes. Seems as though I have won an award for the most inventive interpretation of a name and address. The mystery occurred in the December issue when one of our readers asked about a list of SELCAL used by aircraft. One of our readers sent in the information but these old eyes had some trouble with the handwriting. Our original reporter was none other than:

TABLE 2
North Atlantic Aero Family of Frequencies

NAT-A

Covers ground stations and aircraft inflight across the south central part of the North Atlantic Ocean. Ground stations and the frequencies include:

Canaries, Canary Is	3016	5598	8825	13306	17946
Gander, Canada	3016	5598	8825	13306	
New York, NY USA	3016	5598	8825	13306	17946
Paramaribo, Surinam	3016	8825			
Santa Maria, Azores	3016	5598	8825	13306	
Shanwick, Ireland	3016	5598	8825	13306	17946

NAT-B

Covers ground stations and aircraft inflight across the North Atlantic Ocean registered west of 30 degrees west (North and South American registered aircraft). Ground stations and frequencies include:

Gander, Canada	2899	5616	8864	13291	
New York, NY USA	2899	5616	8864	13291	17946
Reykjavik, Iceland	2899	5616	8864	11279	13291
Santa Maria, Azores	2899	5616	8864	13291	
Shanwick, Ireland	2899	5616	8864	13291	17936

NAT-C

Covers ground stations and aircraft inflight across the North Atlantic Ocean registered east of 30 degrees east (Europe and Africa registered aircraft). Ground stations and frequencies include:

Gander, Canada	2872	5649	8879	13306	
Reykjavik, Iceland	2962	5649	8879	11279	13306
Shanwick, Ireland	2872	5649	8879	13306	17946

NAT-D

Covers ground stations and aircraft inflight across the North Atlantic polar regions. Ground stations and frequencies include:

Bodo, Norway	2971	4675	8891	11279	
Cambridge Bay, Canada	2971	4675	8891	11279	
Churchill, Canada	2971	4675	8891		
Gander, Canada	2971	4675	8891	13291	
Iqaluit, Canada	2971	4675	8891	11279	
Reykjavik, Iceland	2971	4675	8891	11279	13291
Shanwick, Ireland	2672	5649	8879	13306	17946

Graham Wickens; Rock Cottage London Road;
Brimscombe, Stroud; Gloucestershire GL5 2QF; England

Even though I managed to mess up the address, one person did get some mail to Graham. The information that Graham provided concerned the book *High in the Sky* and it is available from:

The Aviation Hobby Shop; 4 Horton Parade; Horton Road, West Drayton; Middlesex UB7 8EA; England

The price is 4 pounds 25 surface and 6 pounds 30 airmail subject to the current exchange rate and UK inflation. The book lists 360 airlines, 73 pages of SELCALs, airline codes, RTTY flight plan decoding and frequencies for ATC, company and military aircraft, 136 pages total.

Many thanks to Ken Holliday, Mike Bennett and Mr. Joe Doe in London for their contributions towards solving the mystery. Now without further ado, let's check what some of you have been hearing in the Utility World this month . . .

Utility Loggings

Abbreviations used in this column

All times UTC, frequencies in kilohertz. All voice transmissions are English unless otherwise noted.

AM	Amplitude modulation	ISB	Independent sideband
ARQ	SITOR	LSB	Lower sideband
CW	Morse code	RTTY	Radioteletype
FAX	Facsimile	UNID	Unidentified
FEC	Forward error correction	USB	Upper sideband
ID	Identification		

- 2063.0 KLB-Seattle Radio, Washington, with CW marker at 0235. (Jim Ingram, Aromas, CA) *Welcome to the column, Jim, please report often-ed.*
- 2755.0 CKN-Canadian Forces Vancouver, BC, Canada with CW marker at 0230. (Ingram, CA)
- 4100.0 Female English 3/2-digit number station heard at 2315. (Robert Hurley, Baltimore, MD)
- 4390.0 Female English 3/2-digit number station heard at 2339. (Hurley, MD)
- 4501.0 Voice net with leader 6 Bravo 27 working 6 Bravo 1, 6 Bravo 30 and Charlie 3 in USB at 2230. (Hurley, MD)
- 4603.0 Red Robin #3 asked for Colonel Dickson to Red Robin #2 mobile at 0226 in USB. Who is this? (Thomas Nichols, Indianapolis, IN) *Tom, that's the Michigan branch of the Civil Air Patrol.-ed.*
- 4750.0 Male op working a 2nd male op calling Rebel 1, Rebel 1 over and Hardball 1, Hardball 1 over. All in USB at 1200. (Mierzewski, PA)
- 5090.0 Female English 3/2-digit number station at 2225. (Dix, NY)
- 5180.0 Cape Radio Net heard at 2324 in USB conducting radio checks and getting tracking ships in position. (Richard Bradley, Tampa, FL) *I can't offer a suggestion for a QSL address on this end, Rich. NASA has had a policy in the past of not verifying.-ed.*
- 5259.0 FSIF de 9MF9 no QSV K-unid station in CW at 2230. (Dix, NY)
- 5496.8 PV2S de R5SA with CW marker unknown and unid stations at 1053. (Dix, NY)
- 5696.0 Bravo Bravo 232 receiving instructions to get back on schedule at 0025 in USB. (William Braghardt, Denville, NJ) *This is no April fool joke, folks.*
- USCG CAMSPAC San Francisco calling Border Patrol, Vermont, at 0038 in USB. No reply heard, beats me! (Neal Purdue, Madison, AL) *Beats me.-ed.*
- 6395.0 TBA2/3-Izmir Turkish Naval Radio calling TI3A at 0216 in CW. (Jack Dix, Yonkers, NY)
- 6518.8 NMF-USCG Boston, Massachusetts, working the coast guard cutter SENICA with a SAR in progress. (Ronald Bruckman, Hempstead, MA) *Welcome to the column, Ron, please report often-ed.*
- 6788.0 Hershey with Woodpecker and Gangster in USB at 1130. (Frantz, GA)
- 6756.0 SAM 205 to Andrews at 1425 with a patch to Secretary Baker from Bernie. Told that all twelve hostages have been released by Salvadorian soldiers. (Bruckman, MD) *Did I miss something here?-ed.*
- 6817.0 SAM 681 working Andrews AFB at 2025 and 1550 in USB. (Thomas Redder, Cincinnati, OH)
- 6820.0 Orion Control with unid aircraft. Arrival plans for Andrews AFB. (Frantz, GA) *Probably through Andy, Bill.-ed.*
- 6982.0 Another interesting one. NA4XAB (Missou? Harbor Master) with NA4XAP (National Barge Poseidon). Also NA4X3 and NA4XA3. Many radio checks and testing of transmitters and antennas. Can anyone tell me about these stations. (Frantz, GA) *I think this has something to do with the Department of Energy, Bill.-ed.*
- 6995.0 Female unid language five-digit number station at 0205. (Harry Johnson, Ocean City, MD) *Welcome to the Utility World, Harry. Please report often-ed.*
- 7979.4 Y3K7-Potsdam Meteo, GDR with aviation weather at 0334, RTTY 425/100. (Sam Ricks, Philadelphia, PA)
- 7997.0 SOH299-Warsaw Meteo, Poland, with aviation weather at 0336. RTTY

425/50R. (Ricks, PA)

- 8442.0 SXA37-Piraeus Greek Naval Radio in CW sending a V marker at 0032. (Dix, NY)
- 8600.0 ROT-Moscow Naval Radio sending CQ CW marker at 0155. (Dix, NY)
- 8678.0 ZLP-Irirangi Naval Radio, New Zealand, at 0943 transmitting short naval drill messages in CW. (Dix, NY)
- 8694.0 PJC-Curacao Radio, Netherland Antilles, at 1105 sending CQ CW marker. (Dix, NY)
- 8698.0 9MG-Penang Radio, Malaysia, heard at 1109 sending CQ CW marker. (Dix, NY)
- 8746.8 WOM-FI. Lauderdale Radio, Florida, working 3EYK3 -- Holiday Cruise Ship (part of the Carnival Cruise line) with radio telephone traffic at 1652 in USB. (Ship heard on 8222.9) (G. Van Horn, LA)
- 8825.0 Canary Islands Aeradio working Air France 221 in USB exchanging flight info at 0058. (Dix, NY)
- 8855.0 Fishing fleets-Gulf of Mexico, at 1350 in USB. (Frantz, GA)
- 8867.0 Tahiti Aeradio working Air New Zealand One in USB at 1113 with flight information. (Dix, NY)
- 8939.0 Russian Air Volmet, Moscow, heard transmitting in Russian at 0116. (Dix, NY)
- 8967.0 Trouser working Showboat at 1800 in USB. QSYed from 13207. Also wanted Fred on frequency. (Steve, NY)
- 8972.0 Stockholm Radio with phone patch for Federal Express 122 at 0226 in USB. (Bob Doyle, CT)
- 8973.0 One Tango Lima gave a coded message broadcast at 0847 in USB. Who is this? (Nichols, IN) *Probably Navy, Tom.-ed.*
- 8986.0 McClellan AFB, California, conducting radio checks with March 96 and phone patches with SAC stations at 1615 in USB. Very busy frequency. (Ken Richardson, Flagstaff, AZ) *Normally is, Ken. Welcome to Ute World.-ed.*
- 9008.0 This is one of the more interesting ones for me lately. "Project 889" (shore) with NADC 38 (ship) on this one and 9035 in USB at 1300. Comms about air drops of electronic buoys; placing buoys in the water; picking up other electronic devices and test units. Mentioned Magnavox devices and other "joint venture" electronics. Mentioned location as SW Gulf off Florida. 9035 was primary and 9088 was secondary. (Frantz, GA) *I am at a loss, Bill. Readers?-ed.*
- 9023.0 Sidecar working Quotion and Fred. Sidecar had a rough copy in green and Quotion said to use key 2091, but no copy. Quotion said NUCO is central document and Yeager is on line to go green and they would pass NUCO on to the 24th (NORAD HUNTRESS). Then Fred gave Quotion frequency Tango-20 and TALT H and PU is recorded in the tech op data and that he is E-3 primary. Quotion then told Fred via Sidecar that he would meet him on SATCOM frequency uplink 295.8 and 262.2 downlink. Heard at 1812 in USB. (Steve, NY)
- 9190.0 New York VOLMET heard at 1530 in USB. I haven't seen this listed anywhere before. (Hurley, MD) *Neither have I, Bob, and I haven't heard them there either, may be an image or something.-ed.*
- 10493.0 WGY-912 calling WGY-917 at 1545 in USB, no reply. Where is WGY-917? (Frantz, GA) *Good question, Bill. Probably a VIP relocation site in Maryland. Readers?-ed.*
- 10585.0 3 Kilo working Sierra Bravo at 2040 in USB. (Frantz, GA)
- 10722.0 Unid station sending the letters "PTBT" continuously in CW at 0237. (Dix, NY)
- 10773.0 GGJI calling XONN in CW. Said to QSY 39086 and 44985 at 0106. (Dix, NY)
- 10820.0 Female English four-digit number station heard at 0240. (Dix, NY)
- 10890.0 TOU with Duran-Duran. Only could hear TOU. Comm checks and passing autovon numbers at 1400 in USB. (Frantz, GA)
- 10895.0 Bookshelf with Kopek 41 and 43. Strong signal at 1210 in USB. Radio checks then went to UHF, weather updates. Called this channel Fox. (Frantz, GA)
- 11214.0 Challis Charlie working Trenton with patch to Oakgrove, talking about SATCOM channel 262.2. (Steve, NY)
- 11226.0 Several stations working each other at 1645 including Rankfile, Bluecall, Overgrown and Sunburst on Xray-905. Bluecall, a female op seemed to be net control. Also heard the next day WAR-46 working Maestro at 1658 and Hathaway working Mushroom (*that's what I feel like sometimes.-ed.*) at 1707. All in USB. (Neal Purdue, Madison, AL)



King of the QSLers!

That's just what you are if you succeed in obtaining a coveted utility verification! How about sharing some of your successes with us? Send your QSL or a good photocopy to the Van Horns or to the QSL editor; we'll copy the QSL(s) to be used wherever there's room, and return the original.

- 11233.0 Locus working Edmonton on this one and 9006, and 13257 in USB, 0115 in USB. (Steve, NY)
- 11246.0 MacDill AFB heard in USB at 1737 working VIN. (Tom Nichols, Indianapolis, IN)
- 11267.0 9 Kilo Xray calling 1 Charlie Mike for radio check at 2150 in USB. US Army? (K. Kwan, NY) *No, it's the US Navy HICOM, Kwan.-ed.*
- 12222.0 Fishing fleets heard in LSB at 2145, no IDs. Weather conditions, parts, and repairs discussed. (Frantz, GA)
- 12329.0 OVG-Frederikshavn Danish Marine Radio sending V CW marker at 0248. (Dix, NY)
- 12524.9 EWWJ-Soviet Factory ship Arktika with weather report to Murmansk weather center, via Murmansk Radio at 0130. Located off Halifax, Nova Scotia. Vessel operates in US waters through a joint venture with US trawlers. RTTY 170/50. (Ricks, PA)
- UISZ-Soviet tracking ship Akademik Sergei Korolev with tracking data and kriptogrammas for UIVZ-Komona V. Volkov
- UZZV-Kosmonaut G. Dobrovolski and UZYY-Kosmonaut V. Patsayev during Kvant-2 rendezvous with MIR at 0312. RTTY 170/50. (Ricks, PA)
- 12659.5 9VG37-Singapore Radio, Singapore, sending CQ CW marker at 1114. (Dix, NY)
- 12730.0 UMN/UMV-Murmansk Radio, USSR at 0003 with a CW CW marker. (Dix, NY)
- 12860.0 UGF2-Unid Russian working 4LS at 0327 in Cw. (Dix, NY) *Nothing listed in the ITU list, Jack, good question; anybody know who this is? My guess is a Russian Naval.-ed.*
- 12869.0 XSV-Tianjin Radio at 1136 sending CQ CW marker. (Dix, NY)
- 12888.0 DZK-Bulacan Radio, Philippines, sending a CQ CW marker at 1100. (Dix, NY)
- 13047.5 UAI3-Nakhodka Radio, USSR, sending V CW marker at 1102. (Dix, NY)
- 13116.3 WOM-Ft. Lauderdale Radio, Florida, working Foot Loose with radio telephone traffic at 2324 in USB (ship on 12345.5) (G. Van Horn, LA)
- 13207.0 Fred working Primitive, Fred would check with Huntress about airspace and QSY to D-6. Also gave weather for Tinker and Pease. (Steve, NY)
- 13251.0 ICE 21 working MAC Center (McMurdo Station, Antarctica) and Auckland Center in USB at 0355-0410. (Frantz, GA) *Nice catch, Bill.-ed.*
- 13399.0 DFZG-MFA Belgrade, Yugoslavia, at 1521 with traffic in Czech or Serbo-Croat. RTTY 425/75N. (Art Blair, San Francisco, CA) *Welcome back, Art. How did you fare during the big shake and how about the Niners.-ed.*
- 13524.0 YIO72-Baghdad, Iraq at 1551 with INA news in English. RTTY 350/50R. (Blair, CA)
- 13647.5 OLI5-Prague, Czechoslovakia, at 1545 with CETEKA news in French. RTTY 350/50N. (Blair, CA)
- 14441.5 NNNOCMB-USS Truett (FF-1095) working NNNOXEN with phone patches at 0025 in USB. (Gayle Van Horn, LA)
- NNNOCRK-USS Ponce (LPD-15) working NNOCOZ-USS Forestal (CV-59) with a radio check in USB at 2252. (Gayle Van Horn, LA)
- NNNOCWI-USS Wisconsin (BB-64) calling any stateside MARS station for 40 routine patches. No reply heard. (Gayle Van Horn, Gretna, LA) *Do you blame any stateside for not answering, hi.-ed.*
- 14470.0 NNNOCVZ-USS Mt. Whitney (LCC-29) working NNNOZTI with phone patches at 1945 in USB. (G. Van Horn, LA)
- 14497.0 CSY-AFTN Santa Maria, Azores, with NOTAMN reporting Eastern Test Range operations and Oceanic Stationary Airspace Reservation for Delta 2 launch from Cape Canaveral Air Force Station at 0245. RTTY 425/50. (Ricks, PA) *Sam, Robert Evans new book goes into those types of broadcasts in detail.-ed.*
- 14573.0 5AQ70-Tripoli, Libya, at 1638 with JANA news in Arabic. RTTY 425/50N. (Blair, CA)
- 15935.0 SUA291-Cairo, Egypt, at 1555 with MENA news in French. RTTY 300/50R. (Blair, CA)
- 16192.7 Radio Moscow broadcast feeder in English LSB at 0633. (Brian Webb, Thousand Oaks, CA) *Welcome to the column, Brian. Hope things are well for you and the wife in California.-ed.*

- 16669.5 UIQN-Soviet tanker Penteleymon Ponomarenko at 1645 working UDH in ARQ/TOR. (Blair, CA)
- 16691.0 ENUK-Soviet Bulk/Oil Carrier Akademik Sechenov at 1601 in ARQ/TOR working UAT. (Blair, CA)
- 16702.0 UMFV-Soviet Hydromet research ship Professor Zubov with upper level pressure, temperature, humidity and wind reports to RNO SAAMC (Soviet Arctic/Antarctic Meteor Center) Moscow at 0226. Reported unable to contact RUZU, Soviet research station at Molodezhnaya, Antarctica, after repeated attempts via satellite (*wonder which satellite.-ed.*). Vessel was in the South Atlantic off Brazil. RTTY 170/50. (Ricks, PA)
- 16918.6 VIX-Sydney Radio, Australia, heard at 0044 sending CW V marker. (Dix, NY)
- 17005.9 ZRQ-Cape (Simonstown) Naval Radio, South Africa, in CW with V marker at 1428. (Webb, CA)
- 17007.2 PCH61-Scheveningen Radio, Netherlands, with CW DE marker at 0836. (Webb, CA)
- 17027.0 FFL8-St. Lys Radio, France, at 0516 with CQ CW marker. (Webb, CA)
- 17043.2 JCU-Choshi Radio, Japan, at 0552 with CQ CW marker. (Webb, CA)
- 17048.0 DAF-Norddeich Radio, West Germany, sending a V CW marker at 0141. (Webb, CA)
- 17052.5 JNA-Tokyo Naval Radio, Japan, at 1204 with V CW marker. (Webb, CA)
- 17057.2 SAB8-Goteborg Radio, Sweden, at 0536 with DE CW marker. (Webb, CA)
- 17074.5 PNK-Jayapura Radio, Indonesia, sending CQ CW marker at 1320. (Webb, CA)
- 17091.0 XSQ4-Guangzhou Radio, PRC at 1505 with V CW marker. (Webb, CA)
- 17360.0 RCF41-Moscow, USSR, at 1530 with TASS news in Arabic, RTTY 350/50R. (Blair, CA)
- 17525.0 OLV3-Prague, Czechoslovakia, at 1621 with CETEKA news in English. RTTY 350/50N. (Blair, CA)
- 19954.0 Soviet space station Salyut 7/Cosmos 1686 beacon frequency, CW mode at 1505, doppler shift effect characteristic of orbiting spacecraft, signal gets louder as it approaches, fades as it passes. (Ricks, PA) *Was it CW, Sam, or a PDM buring telemetry?-ed.*
- 20560.0 5AQ88-Tripoli, Libya, at 1617 with JANA news in English. RTTY 350/50R. (Blair, CA)
- 22386.0 JCT-Choshi Radio, Japan, at 2352 with CW marker. (Doyle, CT)
- 22409.0 JOR-Nagasaki Radio, Japan, at 2355 with CW marker. (Doyle, CT)
- 22481.0 Unid CW station, D7PS, D7OM, all starting with D7 at 0005. (Doyle, CT) *Probably Y5M-Rugen radio with a ship list, Bob.-ed.*
- 22485.0 VIX-Sydney Radio, Australia, at 0046 with CW V marker. (Dix, NY)
- 22515.0 KFS-San Francisco Radio, California, at 0009 with CW marker. (Doyle, CT)
- 22524.0 JFA-Matsudo Radio, Japan, at 0048 with CW CQ marker. (Dix, NY)
- 22544.0 FUM-Papeete French Naval Radio, Society Island, sending the usual V marker at 0029 in CW. (Dix, NY)
- 22586.0 CQA4-Unid station heard here with CW marker for several minutes, then idler at 1407. Nothing pops in my ITU list. (L. Van Horn, LA)

Thanks to all for the contributions this month. See you all next month. SK de N5FPW.

The Scanning Report

Bob Kay

c/o MT, P.O. Box 98
Brasstown, NC 28902

Spring Cleaning

Here in the northeast the warm breezes of April are an inspiration to begin our "Spring Cleaning." It is a time to open the windows, air out the house and organize our belongings.

As I sorted through your mail responses from previous columns, it became apparent that this would be an appropriate time to spring clean the popular Treasure Hunt.

Your answers to the Treasure Hunt clues are testimony to the fact that many of you thought that it was necessary to provide long and complex responses. Actually, your answers to any Treasure Hunt clue should never contain more than five words or a combination of five words and five numbers. Most of the time, each clue can be answered in one word.

Sure, some clues are tougher than others, but lengthy responses are not required. To prove my point, let's review the questions and answers for several of the past Treasure Hunts.

In the April 1989 Treasure Hunt, readers were asked to find a popular cordless phone frequency. The answer was 46.610 MHz. It was easy, and everyone got it right. It was also the beginning of the Treasure Hunt; we were off and running.

The August 1989 Treasure Hunt directed readers to review page 8 of the May 1989 issue of *MT*. That particular page featured a B-1 bomber and SR-71 recon aircraft. Players were asked to identify the emergency frequency of both aircraft.

As most of you realize, 243.000 megahertz is the frequency for military air emergencies. Since 243.000 MHz is merely a double of 121.500 MHz (civilian air emergency frequency), I accepted either response.

In the October 1989 Treasure Hunt, the second question asked for the original wording of the following *MT* ad: "The Pro's Subscribe, Shouldn't You?" Old time subscribers quickly remembered that the original wording was as follows: "The CIA subscribes, Shouldn't You?" New subscribers who included an SASE with their entry received the correct response via first class mail.

The fourth question asked for the actual color of the "black boxes" that are carried aboard commercial aircraft. The actual color is Orange. I also accepted International Red.

We kicked off the January 1990 Treasure Hunt with a scanner radio from Ace Electronics. Since the prize was so popular, I made the clues a little tougher. Practically everyone knew that 165.375 was the nationwide command post frequency of the Secret Service. A few folks had trouble finding the engraving and printing frequencies, but,



Are photo speeding tickets a reality? Read the Scanning Report and decide for yourself!

for the most part, 171.385 and 172.275 were not that elusive. Naming a scanner radio with CTCSS tone option was another easy one -- the Bearcat BC 760 was the most popular unit mentioned.

Things got a lot tougher when one of my questions involved a math problem. Here's the question: "What image frequency would I enter into a Bearcat 800 XLT if I wanted to monitor 405.000 megahertz?" The IF frequency of the Bearcat 800 XLT can be 10.7 or 10.8. It varies between models. Multiply the IF x 2 and add the sum to the frequency. When 21.40 or 21.60 are added to 405.00, the answers are 425.40 and 426.60. I accepted either answer as being correct.

In that same issue I also asked if the cordless phone base unit transmitted a duplex signal. Approximately 50 percent of you said false. The remaining half said the statement was true. As half of you realize, the cordless phone base transmits a duplex signal. Since there was such a large division in your response, I did not disqualify anyone for providing the wrong answer.

Next month I'll explain the difference between simplex and duplex signals. And I promise to keep it very "simplex." In the meantime, I'll conclude my "Spring Cleaning" by providing a list of all the lucky Treasure Hunt winners.

Richard Kramer, Reading, PA	Audio booster, Naval Electronics
Joe Nooney, Valatie, NY	Audio booster, Naval Electronics
Karl Aver, Mequon, WI	Discone antenna, Procom
Warren Stehman, Mt. Joy, PA	Frequency counter, Opto Electronics
Pete Christie, Bartlett, TN	Frequency counter, Opto Electronics
Gary Bills, Lynn Haven, FL	Lamp, Littlite

Don Koblishke, Denver, CO Lamp, Littlite
Scanner radio,
Ace Electronics

MT Treasure Hunt

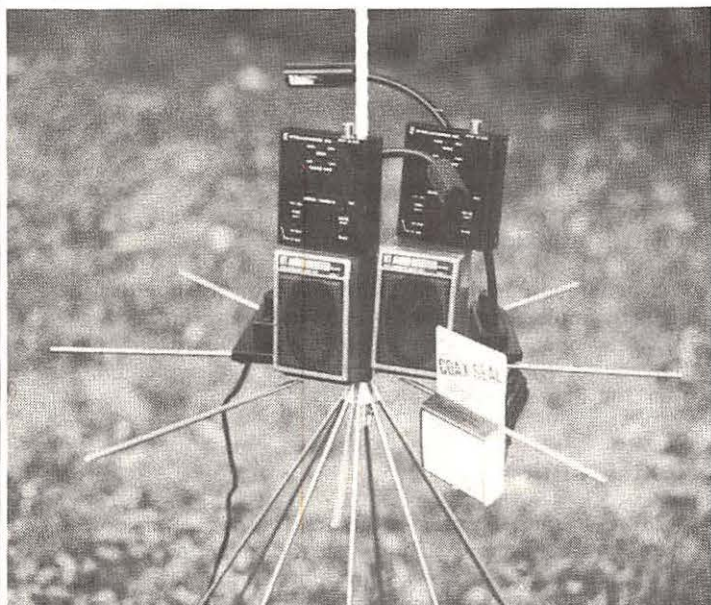
Hurry, folks. This is your last month to win the "ScanRecord" from Capri Electronics. As I told you last month, the ScanRecord is a tape saving device that connects between your scanner radio and a tape player. But unlike other tape savers, the ScanRecord is only four inches long, two inches wide, by two inches deep. It will easily fit into your pocket!

Best of all, the ScanRecord can be powered by a 9 volt battery, making it completely portable. With a hand-held scanner and battery operated tape player, you can make scanner recordings from any location.

The front panel includes a dial control for adjusting sensitivity, a red LED indicator, and a toggle switch for controlling the delay time. And when you are ready to review your tape, the A/B switch on the ScanRecord has eliminated the need to remove the control cable from your recorder. Simply flip the switch and the tape player is ready for instant playback.

I've got two of them, packaged and ready to send out. But you can't win if you don't play. Here are the clues:

1. In the December 1989 Scanning Report, name the fourth company listed in the "Christmas Wish List."
2. Can cellular coverage be restored to Radio Shack's Pro-34? Yes or No.
3. What is the channel spacing on VHF low band?
4. In the November 1989 issue of MT, there is a hidden scanning article that is not mentioned in the index. What is the title of the article?



A few of the prizes that were given away in the 1989 Treasure Hunt.

5. For VHF/UHF monitoring, which cable exhibits the lowest loss per foot: RG58/U or RG-6?

Priced at \$47.00, the ScanRecord is an affordable unit that won't bust your wallet. At this price I'm thinking about ordering two -- one for the field, and one for my shack. To order your very own ScanRecord, contact Capri Electronics, 303-884-9084, 1238 Highway 160-B, Box 589, Bayfield, Colorado 81122.

To enter the contest, send your answers to the Treasure Hunt, c/o MT, P.O. Box 98, Brasstown, NC 28902. And remember, multiple entries improve your chance of winning. Good luck.

Frequency Exchange

Get on your mark, get ready -- GO! Welcome to the Boston Marathon. If you don't want to actually run the Race, Bill Miller has provided the following frequencies for your listening enjoyment:

BOSTON MARATHON

State Police	
42.44	Main channel
158.970	Inner City
Boston Police	
460.350	Channel 1
460.300	Channel 7 (tow requests)
Media	
455.1125	WHDH helicopter
450.350	WBZ helicopter/camera
450.550	WBZ desk
455.2875	WCVB special events
HAM radio volunteers	
145.230	Calls for Red Cross
147.360	Net control

Bill also pointed out that the following frequencies may be used in an emergency: Red Cross, 47.42 and 47.58; the Boston Medical Net on 155.280. Thanks, Bill.

Since we're running through the streets of Boston, let's stop and visit with the Boston branch of the FBI:

163.985	KCB 808
167.2375	KCB 801
167.3625	KCB 800
167.4625	KCB 801
167.6125	KCB 808
162.9750	KCB 801
167.2625	KCB 801

Actually, I've only printed a small portion of Arthur Heely's list. The original document contains call letters, transmitter locations and repeater frequencies. It is one of the most comprehensive one-page federal lists that I've seen for the New Haven and Boston FBI. Interested? If so, the list is free. Send an SASE to the Frequency Exchange, c/o MT, P.O. Box 98, Brasstown, NC 28902. Come and get 'em while they're hot!

Antenna Madness

With the return of warmer weather, many of you have asked if I would supply a set of plans for do-it-yourself antennas. Upon considering the request, I realized that you didn't want ordinary sketches. You wanted a set of plans that were specifically designed for scanner buffs. Complicated formulas, complex math equations and pages of antenna theory were not wanted.

When I jokingly asked if there were any additional guidelines, you got real serious and told me that you didn't want to spend more than \$20.00 for a complete set of plans.

Although it was a tall order to fill, I designed a set of plans specifically for you -- the scanner buff. No math, no formulas, no theory. All the sketches are clearly drawn, with measurements in good old-fashioned feet and inches.

These plans show you how to do the following: Convert a standard television antenna into a VHF/UHF beam, convert a standard UHF Bow Tie antenna into a top performer on the military air and cellular frequencies, build a familiar and popular ground plane antenna, construct a long-wire cordless phone receiving antenna, and how to make a long wire antenna for scanning between 30 and 500 megahertz. If you purchased each antenna commercially, your cost would be over \$200.00.

After I had drawn the plans, there was another problem. I needed to have them printed. DX Radio Supply gave me the best deal in town. They agreed to print and mail the plans to your doorstep for only \$19.00.

Best of all, the plans are designed so that practically anyone can build the antennas. All you need are a few standard hand tools and a ruler. Ready to start building? If so, send your order to "Plans," Box 360, Wagontown, PA 19376.

Looking for the All-Ohio Scanner Club

John A. Prevoyak recently asked where he could find the frequencies for the following Ohio agencies: FBI, Secret

Service, U.S. Marshal and DEA. John, the All-Ohio Scanner Club would be more than happy to help you. Membership dues are only \$15.00 per year and you can join by simply writing to Club Headquarters, 50 Villa Road, Springfield, Ohio 45003.

Smiling for Connecticut Radar, Part III

In the October 1989 issue of *MT* I offered the locations of fixed speed monitoring devices in the state of Connecticut. The "boxes" were positioned along the roadside and they were thought to be cameras that photographed the license plates of speeding vehicles.

In the January 1990 issue I reported that the boxes seemed to be nothing more than some sort of traffic control device. A recent letter from a Road Maintenance Supervisor explained that the boxes occasionally contain devices that "count" the number of vehicles using a particular stretch of highway.

If you want personally to check out these mysterious "roadside boxes," I'll send you the complete list of locations for an SASE. Send your request to "Radar Locations," c/o *MT*, P.O. Box 98, Brasstown, NC 28902.

Smiling for Mississippi Radar, Part I

Trucker Angelo Warino recently received a photo speeding ticket from Mississippi. The ticket was mailed to his P.O. Box in Belle Chase, Louisiana. The ticket included a photo of the license plate on the rear of his trailer.

If you're interested in the exact location, simply send a SASE to "Photo Tickers," c/o *MT*, P.O. Box 98, Brasstown, NC 28902.

Top Guns in Wisconsin

The Volk field military base in Wisconsin has been given 37 million dollars to implement an "Aircraft Combat Maneuvering Course." According to the Air Force, the project will bring air-to-air, ground-to-air, and air-to-ground training similar to that in the movie "Top Gun." The project is expected to be completed by 1992.

Scanner buffs living in central Wisconsin should also begin to implement changes to their monitoring shacks. By 1992 a scanner radio that includes the military aircraft frequencies will be a definite necessity. (News clipping from Joe Sepuvado, Nekoosa, WI)

Next Month

More scanner frequencies, more free lists and more free prizes for the Treasure Hunt. In the meantime, check your expiration date and renew your subscription early. In our fast-paced world of scanning, you can't afford to miss a single issue!

USE CAUTION WHEN INSTALLING AND REPAIRING ANTENNA SYSTEMS. BE SURE TO USE PROPER TOOLS AND SAFETY EQUIPMENT. BE CAREFUL NOT TO COME INTO CONTACT WITH POWER LINES.



NORTHEAST SCANNING NEWS:

Sammy the Scanner

212 W. Broad St., Paulsboro, NJ 08066

RADIOSCAN MAGAZINE

THE INTERNATIONAL MAGAZINE FOR THE HISPANIC RADIO AMATEUR

*Conozca el Interesante Contenido de
Radioscan Magazine
¡Una revista editada en Español, para los radioaficionados!*

...Y ya está a la venta el libro

"RADIOANTENAS"

Editado por Radioscan Corporation

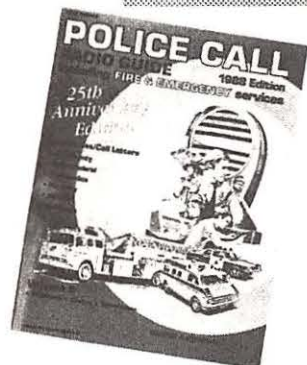
Ordenelo hoy por sólo \$9.95

(+ \$2.00 por UPS in USA, ó \$5.00 por vía aérea)



*YES, we are reaching the Growing Hispanic Market
in U.S.A and in 21 Countries.*

what's new?



Public Safety Frequencies

For 25 years *Police Call*, edited by Gene Hughes, has been recognized as the leading source of public safety frequencies nationwide. Concentrating on police, fire and ambulance listings for state, local and federal agencies, these volumes have evolved to include forestry, aircraft and railroads as well.

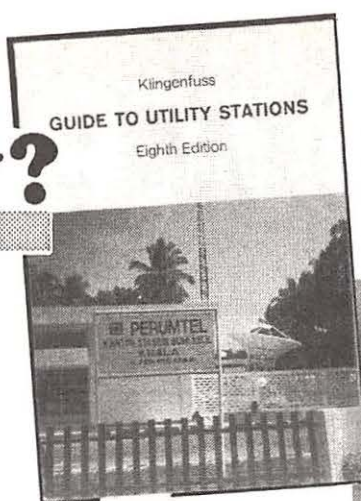
Under constant computer-base revision, *Police Call* is conveniently organized alphabetically by state and city, then followed by a frequency cross-reference. An appendix of frequencies and allocations by the FCC is a handy, fingertip guide for understanding the spectrum.

Published in nine volumes, the concise format emphasizes listings in the 30-50, 151-174, 450-470 and now even the 806-861 MHz band, unaddressed in earlier editions.

The 1990 volumes are \$7.95 each plus \$2 shipping from Grove Enterprises, PO Box 98, Brasstown, NC 28902 or phone 1-800-438-8155.

Guide to Utilities

Desktop publishing has made it easy for just about anyone to put out a book with a credible print



job, but the proof is in the content -- and each new edition of Joerg Klingenfuss's *Utility Guide* verifies his continued leadership.

The new eighth is no exception. Hefty in size and content, the *Guide* includes not only voice and CW listings, but RTTY and FAX as well. Most files are cross-referenced by frequency and call sign; other tables offer schedules of press teletype and facsimile.

Appendices include common abbreviations, station country and address lists, the RTTY Z code, maritime frequency band plans, emission designators and many other useful references for the serious communications listener.

The *Guide to Utility Stations* is available for \$29.95 from various MT advertisers.

Electronic Circuit Repair

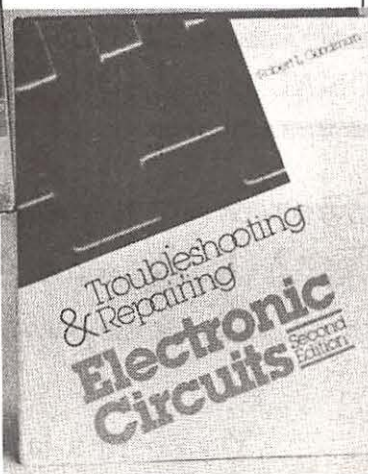
Robert Goodman's best-selling all-in-one guide to electronic circuit repair is now in a revised second edition.

Each chapter has been updated with new material for working with circuitry both old and new -- from tubes to transistors to ICs and more -- and features professional techniques for diagnosing and repairing the circuitry used in virtually every popular electronic device, including TVs, stereos, CD players, VCRs, radios and more.

Troubleshooting and Repairing Electronic Circuits

is designed for both hobbyists and technicians.

You can get the 320 page "Troubleshooting" for \$18.95 plus 1.90 book rate or 3.05 UPS from DX Radio Supply, P.O. Box 360, Wagontown, PA 19376.



"Hands Free" 49 MHz Radios

Convenient communications is what Midland's pair of new 49 MHz radios are all about. Using a headset with boom microphone and antenna, and a belt-mounted transmitter, these two-way radios are great for simple, short-range communications.

The microphone is voice activated, allowing operators to talk and listen without pressing any buttons. (The voice activated circuitry can be manually overridden.)

A dual conversion receiver provides crisp, clear sound. Model 75-108 offers a selection of five different channels; 75-107 is a single

channel unit.

Additional information is available by writing to Midland International Corporation, Consumer Communications Division, 1690 N. Topping, Kansas City, MO 64120.

Seeker-PC Computer-Aided Monitoring

AF Systems has announced their newest computer-aided communications monitoring program. Intended to automate tuning and frequency retrieval in HF communications receivers, this newest version steps beyond the simple control by early Commodore C-64 computers and allows full IBM-compatible manipulation of both the R71A and Kenwood R5000 receivers.

For manual operation the SEEKER-PC is menu driven (see illustration); automated, it will scan, search, store, sample, log, and even sample up to six frequencies and modes with a built-in timer to look for the strongest signal, activating a tape recorder for the designated period.

Powerful programs like this one don't come cheap, but if you want the ultimate in shortwave monitoring command, the \$479 plus \$13.50 shipping cost is reasonable. An informational package and demonstration disk are available from AF Systems, PO Box 9145, Waukegan, IL 60079.



SEEKER-PC file knobs mode utility setup HELP		AUTO-RECORD	
TIME/DATE	UTC: 15:19:57 Friday	LOCAL: 10:19:57 Friday	10-06-1989
UFO A:	5.000.000 AM	SIGNAL LEVEL:	123456789
MEM # 26:	9.590.000 AM	CUTOFF LEVEL:	^
STEPSIZE:	0.000.100		
STATUS (OFF/ON)		AUTOSEER	PRINT LOG
Evaluator: AUGUST 1989			
<p align="center">AUTO-RECORD DATABASE</p> <p>STATUS: ACTIVE RECORD 93 of 300</p> <p>DESC: Radio Netherlands, first daily broadcast to North America</p> <p>ACTIVE DAYS (Y/N): SUN?Y MON?Y TUE?Y WED?Y THU?Y FRI?Y SAT?Y</p> <p>TIMES - START: 00:30 END: 01:25 MINIMUM SIGNAL LEVEL (0-9): 7</p>			
FREQ 1: 15.315.000	MODE 1: A	FREQ 2: 6.165.000	MODE 2: A
FREQ 3: 6.020.000	MODE 3: A	FREQ 4: 0	MODE 4:
FREQ 5: 0	MODE 5:	FREQ 6: 0	MODE 6:

Aero/Marine Beacon Guide

For the vast majority of shortwave listeners, the region below 500 kilohertz remains a mystery. A few stalwart enthusiasts monitor that range regularly; even fewer actually transmit signals in the license-free 160-190 kHz band.

One of these veterans is Ken Stryker whose laborious efforts at keeping track of who's down there are well respected by fellow "lowfers". Ken's frequency database is printed periodically and this latest edition is the biggest and best ever.

Listings include frequency, location, format and power for those navigational beacons heard beeping throughout the 191-535 and 1600-1745 kHz ranges. Cross-referenced by identifier and frequency, the signals are also discussed in several pages of informative text.

The 1990 *Aero/Marine Beacon Guide* is available for \$15 postpaid from Ken Stryker, 2856-G West Touhy Ave., Chicago, IL 60645.

AEA HF Antenna

Advanced Electronics applications, Inc. has once again achieved a

significant engineering breakthrough..." reads the AEA press release. The "significant engineering breakthrough" is the new high-performance, low-profile "HF IsoLoop" antenna.

According to the company, "the IsoLoop is the ideal attic or balcony antenna." Its balanced feed system prevents feedline radiation which reduces the potential for television and other types of interference.

The HF IsoLoop tunes continuously from 14 to 30 MHz and is rated to 150 watts. It measures three feet per side and is square in shape.

The press release did not give a price. Regrettably, as it also did not give a company address or phone number, we can only suggest that you contact your local ham radio dealer should you require more information.

GMRS Repeater Guide

GMRS or General Mobile Radio Service (formerly Class A Citizen's Radio), is one of the fastest-growing private land mobile radio services. It's also probably one of the best-kept secrets in radio.

Twenty-three frequencies, organized into two groups,

RADIO BOOKS

The CITIZEN'S GUIDE TO SCANNING



Police and fire scanning are exciting, but how about eavesdropping as the Secret Service prepares for a Presidential visit? Or hearing the coach call the plays or your neighbors' phone calls? Bob Kay, popular MT columnist, makes scanning easy. Priced right, \$12.95.

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A unique and comprehensive guide to aeronautical communications. Covers from 2 to 30 MHz (shortwave), 30 to 50 MHz, 108 to 174 MHz and above 406 MHz. Frequencies arranged by state and city. Only \$14.95.



1990 WORLD RADIO TV HANDBOOK



The 44th WRTVH is a "must have" resource for information on radio and TV around the world. Each station listing includes station address, phone numbers, personnel and broadcast schedules. Maps, propagation forecasts and receiver reviews, too. On SALE, \$15.95.

PASSPORT to WORLD BAND RADIO

Over 250 pages of station schedules by frequency of every station on the air from 2000 kHz to 30 MHz. Nothing is left out, station name, location, operation hours, language and more. Plus Larry Magne's tough receiver reviews. Just \$12.95.



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NATIONAL REPEATER GUIDE

are available for GMRS use. Communications are intended primarily for communications by mobile stations, either with other mobile stations, or with base stations. Communications between base stations is not permitted. A \$30.00 FCC license is required.

The National Repeater Guide, published by the Personal Radio Steering Group, tells all about GMRS and lists more than 1,100 GMRS repeater systems and monitoring watches in the United States and Puerto Rico.

The tutorial material in the

80 page booklet is enough to warrant its \$10.00 price tag; the repeater list is icing on the cake. To get your copy, send \$10.00 (postage paid) to Personal Radio Steering Group, P.O. Box 2851, Ann Arbor, Michigan 48106.

Jupiter Now Available

In the February, 1990, edition of *Monitoring Times*, we said that the bad news about the new 100-channel, wideband (25 to 1300 MHz) Jupiter II handheld scanner was that it wasn't available in the U.S.

Now comes word that ACE Communications (10707 E. 106th St., Indianapolis, IN 46256) is offering the radio for sale. There is no word on price or availability of the unit.

The Jupiter II would be the first portable of its kind on the U.S. market to offer 225-400 MHz AM coverage.

To have your new product or book considered for review in *Monitoring Times*, send it to Editor, 140 Dog Branch Road, Brasstown, NC 28902.

Going on the Road

How does that old saying go? "Spring has sprung, the grass has riz, I wonder where the birdies is." For most radio hobbyists, it is time to come up out of the basement, squint into the sunshine, head outside and let the stink blow off. (Nicely put, Uncle Skip. -- Editor)

The winter was a great time to huddle over the dials and log a whole mess of new stuff. But as the weather continues to warm, for most folks, other pursuits begin to enter the life of the radio monitor. We even begin to plan our summer vacations with an eye toward rest and relaxation far from the hustle and bustle of the real world.

You're rambling again, Uncle Skip!

Well, pal, it may be rambling to some folks but I like to think of it as my annual call to take our respective radio acts on the road. It's time to make plans to achieve maximum enjoyment of our hobby whilst we wander the land in search of fun and adventure. Fellow radio monitors! Without further ado, I give you . . .

UNCLE SKIP'S GUIDE TO PORTABLE DXing

Goin' portable can be as simple as sticking a Panasonic RF-B10 in your shirt pocket or as complicated as "shock-mounting" an ICOM R-9000 in your Fourwheel Drive. For the purpose of vacation planning, we will assume a setup in the light luggable category.

Comedian George Carlin once said that "Your house is all your stuff with a cover over it. When you travel you take a smaller version of your stuff with you." For the traveling radio monitor, truer words were seldom spoken. While we would love to take all of our radio gear in our respective portmanteaus, we must come up with that "smaller version of our stuff" to assure that our vacation does not become too much like work.

A good rule of thumb for most folks would be to plan to take only what can be carried in one bag or case. Barring breakthroughs in micro-miniaturization between deadline and publication of this column, that would limit you to one receiver and some support equipment. With that said, let's take a look at some of the equipment you might want to use.

Teeny Weeny Radios

Shortwave listeners used to be limited to the SONY ICF-2001 when seeking a high-

performance portable. Now there are dozens of portable shortwave rigs out there including about half a dozen high-performance radios.

Also, many companies have come out with little bitty "pocket rocket" receivers that trade off some performance for size. But don't rule any of these receivers just because their performance figures don't mimic those of a Japan Radio NRD-525. Low cost and portability might just win the day when you are planning on light recreational listening between other pursuits while on vacation.

VHF enthusiasts can choose from catalogs full of handheld scanners. In this realm, it would seem you pretty much get what you pay for. The more bucks you have to spend, the more features and performance you will acquire. For traveling listening, programable scanners become a must.

One word of caution. Several states (New Jersey, for example) take a very dim view of people carrying scanners in their cars. If you don't feel like spending part of your vacation arguing over who is going to get the top bunk in the county jail, you might want to check out applicable laws along your radio route.

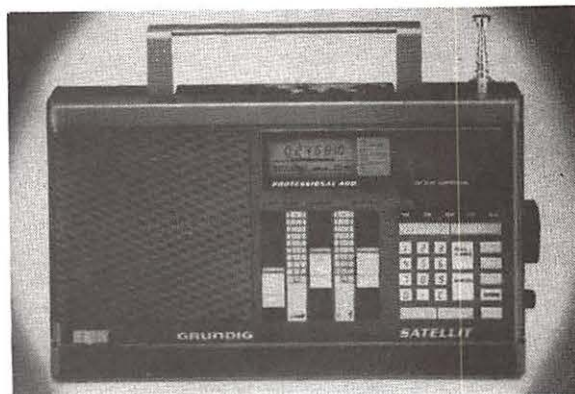
Many amateur radio operators have made portable operations a specialty. Hams have managed to take their rigs into every imaginable environment, including outer space. (See the feature article in this issue!)

While there are multitudes of VHF transceivers designed for hand-held and portable use, HF gear for the road remains limited. But that only triggers the tenacity gland in radio amateurs. Homebrewing portable gear is almost as much fun as operating with it.

Lugging Luggage, or Keeping it all Together

If you were to peruse the catalogs of several shortwave equipment advertisers listed in the pages of *Monitoring Times*, you will discover that some folks carry cute little cases for transporting your portable receiver. These cases tend to be specific to particular rigs, limiting their general use.

A superior alternative designed just for the purpose of carrying around delicate equipment is the trusty old camera bag. Available in all shapes and sizes from dozens of sources, it should be fairly easy to locate a bag that moves your receiver and its accouterments in style.



There are several high performance portable receivers available for vacation and other trips.

My discount store special camera bag has survived through three different DX portables. Most of these bags also have many nooks, crannies and pockets to store all those little accessories you just can't live without.

Another alternative might be a briefcase. You might find it necessary to add some padding to keep everything from banging around. If you are into practical as opposed to pretty, you can use common household sponges to accomplish this purpose.

If you are planning on traveling by air, remember that we live in a very weird world. Make sure you pack and handle your equipment in a manner that won't get it mistaken for some sort of terrorist bomb. Also keep in mind that turning on your radio - even if it is only a receiver and not a transmitter - inside a plane can cause several air marshalls to appear and wrestle you to the ground. Reportedly, their operation interferes with the plane's sensitive electronics systems.

Antenna Ideas

Most portable gear will work just fine using the antenna that comes attached. Some portable shortwave receivers go into terminal overload if you extend things beyond their whip. However, Old Uncle Skip remains convinced that many folks are in this hobby because they get a great deal of pleasure out of playing with antennas.

If you fall into this category and intend to assemble a traveling radio shack, please remember -- PORTABLE IS PORTABLE!! What's the point of getting your station crammed into a suitcase if you have to hire a Red Cap to carry your antenna system?

The KISS law applies here (Keep It Simple, Stupid). Limit your portable antenna antics to simple wire constructions. Ten meters of light-gauge insulated stranded wire should do the trick.

If you put a one ounce fishing weight on

one end, you can either lower the antenna out of an apartment window or sling it up into a tree. Just make sure you secure the weight well and watch where you are slinging it. Keep away from all powerlines or other power sources.

Scanner people should content themselves with taking vacations to high places. If you can't afford the penthouse suite, you might be able to discover the stairway up to the balcony. Higher is almost always better when you are chasing VHF.

One possibility would be to utilize a magnetic mount VHF auto antenna. This should be small enough to carry, and, with a little creativity, could be mounted in many locations.

Hams operating HF may want to content themselves with that same long wire the shortwave listener is using, or you might try cutting a few dedicated dipoles out of light wire and feeding them with RG58 or RG8X just to keep things really portable. Amateurs playing with VHF will probably lean towards working through nearby repeater systems. This will limit the need for complex antennas unless you are going "mountaintopping."

Read any Good Books Lately?

If you plan to be a traveling radio monitor, you must remember that you will be listening from different places under different conditions than you are used to. A trip of as little as 100 clicks can put a whole new bunch of signals through your receiver. Therefore, Compadre, you are going to require some data support.

A dedicated shortwave listener should never travel beyond the comforts of home without a copy of the *World Radio TV Handbook*. If your carrying bag does not have space for this tome, you will be missing more than half the fun.

Scanner jockeys are going to want to run into the local Radio Shack near vacation central and pick up the appropriate *Police Call Radio Guide* for the region.

Hams operating VHF portable or mobile over long distances should have the latest addition of the American Radio Relay League's Repeater Directory in their hip pocket.

Books such as these will serve to give you a general lay of the land so you can quickly concentrate on what you really want to listen to.

Logging on the Road

Some folks like to incorporate their vacation DX sessions into the body of their regular station log while others prefer to keep a separate book. It is six of one and a half dozen of the other, but, if you are on the road,

you might prefer to maintain a tape log during your travels.

The price of microcassette recorders has dropped significantly in the last few years. Since you might have uses for one of these diminutive recorders for business or school, you might find you can extend the investment by using it to maintain your log while traveling around the countryside in search of fortune and glory.

If recording doesn't make any sense to you, you can always resort to good old pencil and paper. Why did I say pencil? Did you ever try to sharpen a ball point pen when you were on a camping trip?

Power to the People

For most radio folks, this problem is eliminated by using that magic stuff that comes out of the sockets in the walls. If you happen to be traveling outside of the U.S. of A. to a place using 240 volt mains, you may have to resort to a foreign AC power converter (273-1401 Radio Shack).

The real problem rears its ugly head when you plan to operate off batteries. You see, there is this basic law of marketing that states that you must charge three times the normal price for batteries in resort areas. To keep some of that cash in your pocket, it would behoove you to buy your batteries at your neighborhood discount store prior to

embarking on your adventures.

Self-Preservation

Just a couple of final thoughts before you hit the road, Sancho.

After you have carefully crammed radio, antenna, books and batteries into your bag or briefcase, you might want to toss in one more thing. Find room to squeeze in one standard-issue great big green trash bag. As sure as ants show up at a picnic, rain will show up on a vacation. Who knows, that little dream cabin on the lake might just leak like a sieve when the weather kicks up. You can protect your hobby investment by bagging it under such conditions. Who wants to listen to all those static crashes, anyway?

Last but most certainly not least -- SHOW RESPECT FOR YOUR FAMILY! Let's face facts here; your spouse and kids have to put up with your pursuit of the radio monitoring hobby for fifty weeks of the year. It's okay to bring a bit of it along on the family trek to paradise, but it is better for all concerned if you leave the radio turned off except for those few odd hours when you are not out playing with the kids or getting reacquainted with your significant other.

Remember, take nothing but pictures, leave nothing but footprints, and don't forget to send old Uncle Skip a postcard!



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I've got a little list ...

They whirl over our heads everyday. We never give them any thought. But believe me, they are there transmitting signals all over the VHF/UHF spectrum and above. What are they? Satellites, of course.

What makes me bring this up? Well, Bob Grove dropped me a line and asked me what orbiting satellite is transmitting on 131.575 MHz. While I am not a Larry Van Horn expert on this subject, I do have his *Communications Satellites* book, and I can read. Yep, a quick check confirms no listing for that frequency.

Now Bob also said that another signal was present during this reception of 131.575 on 149.980 MHz. Again, another quick check with Larry's book and we can quickly see that frequency area is rich with US satellite frequencies.

Looking at Larry's book again, I can see several frequencies within the federal frequency spectrum (this column deals with those sorts of things). Some of you folks might want to give these frequencies a try and let us know what you hear. Table 1 is a list of some of these frequencies.

Now, folks, don't expect to turn on your scanner and have it filled with satellite signals from the above list. Give this some time. All the above listed satellites orbit the earth at least once a day so some time during a day's worth of listening, you should hear something.

Also, don't expect good results from an indoor antenna or rubber duckie. Even though they are in orbit high above the earth, they don't put out a lot of power. An outside antenna might be the best suggestion to hear some of these satellites.

If you would like more information on satellite monitoring, give Larry Van Horn's book, *Communication Satellites*, a try.

Satellite Freq List within the Federal Bands Table I

143.625	The MIR space station-launched by the Russians-Voice FM
149.910	Soviet Military NAVSATS-Data transmissions (A NAVSAT stands for navigation satellite)
149.940	Soviet Military NAVSATS-Data transmissions
149.970	Soviet Military NAVSATS-Data transmissions
149.980	US Military/Civilian NAVSATS and Scientific sats
150.000	Soviet Civilian NAVSATS-Data transmissions
150.010	A mystery satellite sending data, yet to be IDed
150.030	Soviet Military NAVSATS-Data transmissions
166.000	Soviet manned space channel-Data transmissions. Also some military unmanned spacecraft
231.500	Soviet unmanned military spacecraft
232.000	Soviet unmanned military spacecraft
239.500	Soviet science spacecraft
240.000	Soviet unmanned military spacecraft
240-270	Area rich with US military communication satellites. Lotsa voice and scrambling also.
247.475	Add-on modules (that's the Russian term, we call them spacecraft) to the MIR space station.
247.500	Soviet spacecraft KVANT telemetry channel (it's docked to the MIR space station)
248.000	Soviet photo satellite taking pictures of earth for scientific study
393.675	Chinese satellite channel
399.760	Soviet military NAVSATS
399.840	Soviet military NAVSATS
399.920	Soviet military NAVSATS
400.000	Soviet civilian NAVSATS
400.080	Soviet military NAVSATS

Denver, Colorado, Fed Frequencies Table II

32.450	Buckley AFB (A-7 aircraft to aircraft) Call sign: Redeye
32.750	Air National Guard Helicopter Operations Call sign: Outlaw
32.850	Buckley AFB (A-7 aircraft to aircraft) Call sign: Redeye
36.450	Buckley AFB (A-7 aircraft to aircraft) Call sign: Redeye
41.450	Buckley AFB (A-7 aircraft to aircraft) Call sign: Redeye
41.750	Air National Guard Helicopter Operations. Call sign: Outlaw
142.400	Buckley AFB (air-to-air/air-to-ground) Call sign: Outlaw
148.035	Buckley AFB Civil Engineer net. Call sign: India
148.215	Buckley AFB Ramp control net
148.325	Buckley AFB Commander's net (input 149.250)
148.450	Buckley AFB Refueling/maintenance-transient aircraft. Call sign: Rex
148.515	Buckley AFB A-7 Readiness/maintenance control net. Call sign: Blue
148.575	Fitzsimmons Army Hospital -- Military police
148.625	Buckley AFB Security Police Call sign: Castle
149.115	Fitzsimmons Army Hospital -- Fire department
149.205	Buckley AFB Base operations/transportation net. Call sign: Tango
150.225	Buckley AFB Military police Call sign: Cobra
163.5125	Buckley AFB Medical net Call sign: Medic
173.075	Buckley AFB Crash crew Call sign: Echo
230.800	Air National Guard Helicopter air-to-air/air-to-ground. Call sign: Outlaw
238.600	SAC Bomb Plot near Gillette, Wyoming
242.400	Air National Guard Helicopter Tactical (pilot to pilot)
243.000	International military distress/emergency channel
253.625	Lowry AFB Command Post/Ft. Carson Call sign: Lowry CP
255.400	FAA Flight Service Station UHF
268.100	Buckley AFB A-7 tactical
269.300	Buckley AFB Ground Control Approach
271.300	Buckley AFB Ground Control Approach
271.900	Instrument route (IR) 416 enroute channel
272.700	Denver ARTCC channel, VHF 125.950
275.800	Buckley AFB ground control, VHF 121.6
281.200	Kit Carson Military Operating Area (MOA) Call sign: Blood Alley
282.200	Denver ARTCC channel, VHF 128.200
284.000	Buckley AFB Ground Control Approach
284.700	Denver Approach/Departure control, VHF 124.8
287.300	Air National Guard, Range Control "Airburst" control
288.100	Denver Approach control, VHF 120.2
289.600	Buckley AFB Control Tower, VHF 121.0
296.700	Buckley AFB Air National Guard A-7 tactical statewide
303.000	New Raymer MOA Call sign: Spirit/primary
306.300	Denver ARTCC, Colby VHF-132.17/Denver VHF 132.17
307.300	Denver Approach Control
314.200	New Raymer MOA Call sign: Spirit/secondary
317.500	Denver ARTCC
319.200	Denver ARTCC
323.100	Denver ARTCC
335.500	Denver ARTCC
338.200	Denver ARTCC
340.800	New Raymer MOA control air refueling
344.200	Kit Carson MOA control air refueling
344.600	Buckley AFB Metro (weather) service
350.300	Denver ARTCC
351.800	Denver ARTCC
362.300	Denver Approach/Departure control
363.000	Denver Approach control
363.400	Kit Carson MOA control air refueling
372.200	Buckley AFB Base Operations
380.200	Cos Approach control
385.700	SAC Bomb plot near Little America, Wyoming

Listening to the Feds in Bronco Land

J. Pringle out in the Denver area submits the nice list of Denver area frequencies in Table II for our listeners.

I would like to thank Mr. Pringle for sending that great list and look forward to hearing from you again. Now some of the rest of you out there, we would like to hear from you.

VHF/UHF and HF Go Together

Randy Ballard has jumped into radio listening in a big way. A year ago Randy bought a used DX-400 at a local pawn shop for \$35.00. Now Randy is using an ICOM R-71A, IC-R-7000, ICOM-751A and Yaesu FT-1012D ham rigs. Sure you don't own some ICOM stock, Randy?

Anyway, Randy has discovered radio and the UHF military aircraft band in particular. He says that he is monitoring 295.7 and 275.8 MHz to catch SAC aircraft at Barksdale AFB preparing for their missions. Randy says that he lives about three minutes from Barksdale and regularly monitors a variety of call signs that utilize the base. Some of those call signs include:

Doom 61, 62, 63, etc: B-52 bombers
Super 73, 74, 75, etc: KC-135 tankers
Elite 11, 12, 13, etc: KC-10 tankers

According to Randy, the base operations UHF frequency is on SAC primary channel 311.0, and the call sign heard for Barksdale is "Mudbug Control." Wonder how many of you know what a Mudbug is? Louisiana folks - no fair telling anybody the answer to that one.

By using his R-7000 and R-71A together for monitoring, Randy has been able to hear flights leave Barksdale on military aircraft frequencies and follow the flights via SAC's HF network on the R-71A.

This brings me to a very important point. A well-equipped federal monitoring station should include as part of that station a shortwave receiver. A lot of times activity that you hear on VHF/UHF is also using the shortwave spectrum for communications.

By using this method, a better understanding of your favorite agency on shortwave and VHF/UHF will result and you won't miss any of the action once the activity leaves your VHF/UHF range.

Thanks for the tips, Randy, and we'll be looking for more reports from you in the Pelican State of Louisiana.

Crazy About Military Aircraft

Well, folks, I have finally found a person as crazy as I am about military aircraft and the

military aircraft band. That honor belongs to Mark Holmes in College Park, Georgia. Mark says he listens to VHF/UHF/short-wave aircraft two-way radio communications; however, military aircraft on UHF/HF is far more intriguing to him.

Mark says his obsession is identifying military aircraft call signs. Mark's list that covered several months of listening to the bands was forwarded to me and I condensed some of the call signs list he provided into the list I have presented in Table III.

Now this list only reflects the USAF call signs that Mark provided us. It is by no means complete. But it does show some interesting information and tags quite a few call signs currently in use with the type of aircraft that is utilizing that call sign.

As a note to those who will use this list, the ** following the name indicates a two digit number that shows the flight number. It helps personnel involved with the flight keep missions from the same unit from being confused. Thus, Doom 61 is different from, say, Doom 62, etc.

Mark, thanks a bunch for the list and I am looking forward to hearing from you again with more of your valuable intercepts.

And that brings to a close another month of the federal file. Think I'll stroll to the kitchen for a cubo or two, would you believe three?

mt

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Flowery Branch, GA 30542
Phone: 404-967-9757

USAF CALL SIGNS Table III

April **	KC-135	Griff **	B-52	Pawn **	KC-135
Arter **	C-130	Gull **	WC-130	Pearl **	KC-135
Backy **	KC-10	Gumby **	B-52	Petro **	KC-10
Bake **	C-130	Guss **	KC-135	Razor **	FB-111
Belga **	C-130	Happy **	KC-135	Reena **	C-130
Bobcat **	T-43	Havoc **	B-52	Rhett **	KC-135
Bode **	KC-135	Heat **	FB-111	Rough **	T-37
Boxer **	C-21	Hifi **	KC-135	Sentry **	E-3
Chill **	B-52	Hobby **	C-130	Shamu **	KC-10
Cody **	C-130	Hoist **	KC-10	Shiva **	B-52
Coho **	KC-135	Impact **	C-130	Silky **	KC-135
Coty 4*	C-130	Jambo **	B-52	Silo **	C-130
Coty 9*	C-141	King **	C-130	Soda **	KC-135
Czar **	B-52	Lazer **	B-52	Steel **	RF-4
Decoy **	C-130	Luger **	B-52	Super **	KC-10
Demon **	C-130	May **	C-130	Swift **	C-12
Dixie **	RF-4	McCoy **	F-16	Tess **	C-130
Dog **	B-52	Mellow **	C-130	Toma **	A-7
Doom **	B-52	Moose **	KC-135	Treld **	KC-135
Dude **	KC-10	More **	C-141	Trend **	KC-135
Dusty **	C-130	Music **	C-130	Tribe **	KC-135
Elite **	KC-10	Nitro **	B-52	Trout **	C-21
Ethel **	KC-135	Nomad **	F-15	Tuff **	B-52
Exxon **	KC-10	Noose **	C-130	Ursa **	KC-135
Fallon **	T-37	Omni **	C-130	Wager **	KC-135
Fame **	C-21	Opec **	KC-10	Wise **	C-130
Fist **	KC-10	Pacer **	C-21	Zeus **	B-52

PTT+ Berna Radio

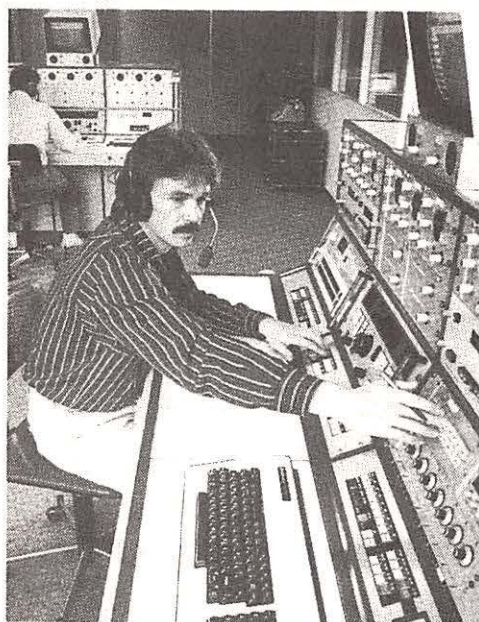
Berna Radio is a Long Distance Operational Control (LDOC) aeronautical ground station located in Berne, Switzerland. It's an integral part of Bern Radio, a division of the Swiss PTT (Post, Telegraph and Telephone), the national telecommunications authority.

According to the 1990 Bern Radio Manual, "The Swiss aeronautical ground station BERNA RADIO is open to all aircraft having or wishing an agreement with the Swiss PTT." Communications are handled in the HF (shortwave) bands utilizing USB.

Providing many of the same type of services as Houston Radio, Atlanta Flight Support, Rainbow Radio, UK Radio and others, this aeronautical mobile service handles air/ground communications for a large number of airlines, air rescue services, corporate aviation and private aircraft. Some of the services offered by Berna Radio include:

Operational Phone Patches -- These include conversations between an aircraft and a party on the ground; for example, between an aircraft and their company station.

Private Phone Patches -- Conversations between an aircraft and a private subscriber worldwide. These phone patches are handled on nonaeronautical frequencies, according to Berna Radio's instructions.



Operating Berna-Radio

Radiotelex -- Telex conversations between an aircraft and a subscriber on ground are available for all aircraft fitted with SITOR (ARQ) equipment.

OTACC -- Requests for hotel reservations are handled by Berna Radio, with subsequent confirmation by next call.

Medical Assistance -- Medical assistance is available by direct phone patch to the University Hospital (Zurich) or to a hospital requested by the caller.

Messages Air-Ground -- All messages from aircraft are accepted and relayed via SITA (a program-controlled message switching system), AFTN, ARINC, Telex, or telephone according to caller's instructions.

Weather Information -- TAF and METAR are available from most places in the world.

Frequencies utilized for watch and operational phone patches include the following:

Freq kHz	
3010	Night frequency (on request)
4654	Night and short range frequency (24 hours)
6643	Preferred night frequency (24 hours)
8936	Frequency for general use within European area (24 hours), worldwide range during night
10069	Frequency for general use within European area (24 hours), worldwide range during night
13205	Frequency for general use (24 hours)
15046	Frequency for general use (24 hours)
18023	Long range frequency (24 hours)
21988	Preferred frequency for Middle East and Africa, during daytime in Switzerland
23285	Long range frequency, during daytime in Switzerland
25500	Long range frequency, during daytime in Switzerland (on request)

Additionally, the switching center in Berne is able to dial directly into the international telephone and telex networks. Up to six conversations, or the same number of message and meteorological reports, can be handled simultaneously.

All operator positions are equipped with selective calling facilities (SELCAL) to permit them to call an individual aircraft which has a receiving unit aboard. The station is also fitted with CALSEL decoders on all watch-frequencies. Aircraft equipped with respective coders may substitute their voice call which may enable them to be heard even in adverse radio conditions.

Berna Radio also operates a Maritime Mobile Service (as does Rainbow Radio and UK Radio), which handles maritime telecommunications needs in regard to phone calls, radiotelegrams, and radiotelex links on the HF bands on a worldwide basis.

There are 35 full and part time operators employed by Berna Radio. Out of this staff, 15 persons operate the aeronautical mobile service, with two operators on duty during the day and one working at night; the rest of the operators work the maritime radio services.

Berna Radio does verify reception reports; however, please remember to include an IRC with your report for return postage. Send your reception reports to the following address:

General Directorate of Swiss PTT
Aeronautical Mobile Service
p. o. K. Gast
Radio Communications Operations Division
Operations Management Branch,
Mobile HF Radio Services
Laupenstrasse 18
CH-3030 Berne, Switzerland

The Feds Gang Up on 123.450

Roger West (Wisconsin) reports that the FAA and the FCC are starting to fine pilots in the state of Wisconsin who use the frequency 123.450 for air-to-air communications.

Plane Talk comment: As we all know, pilots, including airline pilots, from coast to coast use this frequency for air-to-air chit-chat. One evening last week, I heard pilots from two different major airlines agree to establish contact on that very same frequency. What did they talk about? Weather conditions around the area to which one of the pilots was heading and the other participant in the conversation had just left.

It's true that pilots can receive the same info from their company stations, but what

harm can come from using 123.450 for the exchange of relevant information? That is, as long as it isn't too lengthy, and the conversation doesn't deteriorate into comparisons of the dates the pilots had the previous evening.

Anyway, the main question this writer has is how are the two agencies going to catch and identify all the pilots who use this frequency? That remains to be seen!

Northwest Airlines Short Pilots

Roger also sent in a copy of an article from a local newspaper concerning Northwest Airlines' shortage of pilots. It was reported that the shortage was so severe that hundreds of flights have had to be canceled in recent months. To stem the costly cutbacks, the airline has halted pilot advancement training for the last 45 days of 1989, putting back into aircraft its pilot instructors and other pilots being trained for advancement, although the airline is still training newly-hired pilots.

Northwest has stepped up their pilot hiring; for 1990 there are plans to hire 780 pilots. An internal company projection said that just 43 pilots will retire next year, with as many as four more a month leaving their jobs for other reasons.

Some employees believe that the pilot shortage will be hard to fix. For one thing, pilots advance on the basis of seniority, meaning each advancement triggers a series of new openings and the need for new training down through smaller aircraft types. Each of those advancements also sets off a series of other openings in pilot, co-pilot (first officer), and second officer jobs throughout the carrier's eight types of equipment (aircraft). Each crew member making a move must be trained anew. Eventually, room is made for newly hired pilots on the smallest jetliners.

Among the places that this airline needs pilots is in its new 747-400s, which the most senior pilots fly. The addition of a single 747-400 requires 14 captains and 14 first officers. Northwest will be getting four more of this type of aircraft by June, 1990. That means it needs at least 112 pilots by June, but it can train no more than eight crews a month.

The situation is further complicated by Northwest's merged seniority list, which combines former Republic Airline crew members into a single list with Northwest crews. That creates new opportunities for the former Republic pilots to advance into better-paying jobs flying larger jets. However, it also will soon load up Northwest's training system with new demands in regard to an overloading of the present facilities utilized for training the pilots.

Comment: Northwest is not alone in their dilemma. Just about every major airline in the country is feeling the same crunch, due to the shortage of pilots. With the resurgence of interest in aviation in young people today, and the plethora of pilot training programs offered by many colleges and universities -- as well as the pilots coming from the armed services -- hopefully, this problem may be on the way to being solved.

UFO Close Encounters

William Webb (Kentucky) tells us that he monitored a recent transmission where the pilot of a major airline described a UFO that was with them for about 12-15 minutes. When the controller at Indy Center asked if they wanted to make a formal report of the sighting, the pilot got very quiet for a moment or two, then came back and said, "Not tonight, too much paperwork!"

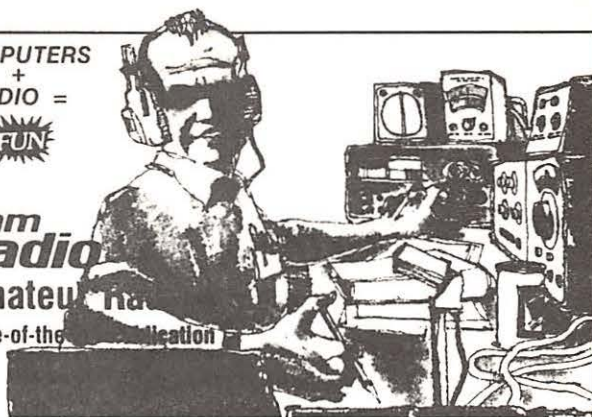
This writer heard a similar occurrence a few years ago. After listening to the pilot's description of a possible UFO, the controller questioned, "Do you want to make a formal report to the

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And there's more! Monthly columns by: Joe Carr, K4IPV on the ins and outs of repairing and troubleshooting your radio; Bill Orr, W6SAI on antennas and antenna technology plus a lot more; noted HF/VHF operator and DX'er Joe Reisert, W1JR's world of VHF and UHF technology; and noted government propagation expert Garth Stonehocker, K0RYW on propagation.

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authorities of what you saw? I saw a movie once where a controller said that to a pilot!"

The controller chuckled a bit after he said this, but the pilot who made the sighting didn't seem to see anything funny about the situation! He was dead serious about what he saw -- or thought he saw.

San Juan ARINC Off Line

It's official -- San Juan ARINC is no longer an operational air/ground station. Richard Covell, Air/Ground Operations Manager of ARINC, has confirmed that their San Juan Communications Center had ceased operations.

Covell tells *Monitoring Times* that Hurricane Hugo caused some problems; however, the FAA had planned to scale down their San Juan ATC Facilities on 11 January, 1990. Therefore, the hurricane provided reason to expedite things by both the FAA and ARINC. ARINC is keeping some shortwave equipment in place at San Juan, but it will be remotely controlled by the New York ARINC Communications Center. The following frequencies will be utilized:

NAT/A: 3016, 5598, 8825, 13306, 17946

CAR/A: 2887, 5550, 6577, 8846, 8918, 13396, 13297, 17907

That's it for this time. Coming up: A look at the nation's largest charter -- American Trans Air; High Frequency Aero Monitoring; Wind Shear and Microbursts, their effect on aircraft; the FAA Academy and lots of other goodies.

Until then, 73 and out.



The No Code License is Coming!

Few things have galvanized the ham radio community more than the idea of a no Morse code license. To traditionalists, the very idea is enough to raise blood pressure and many an angry word has been exchanged both on the air and in print. Others point to the codeless license as a last hope for a dying hobby.

Either way, the no-code license concept took a major step forward with the formal proposal by the FCC of a Communicator ham license. The Communicator license, which would replace the current Novice and Technician class license and which would allow operators who hold the new license operating privileges on any ham band from 222 MHz and up, would not require any test of Morse code.

Communicator class operators would not be permitted to transmit on the 2 and 6 meter bands (below 30 MHz). Call signs will be issued from the D block.

According to the *W5YI Report*, the Communicator exam would consist of 30

Novice and 25 Technician questions and 5 new questions for a total of 60 written questions. The Communicator who wants full Technician privileges could obtain them by simply passing a 5 word per minute code test. In this way, the new license would conform to international regulations that require proficiency in Morse code for international operation below 30 MHz.

The FCC has requested comments on the new Communicator class license and would be interested in hearing from you. Be sure to mention both the document number -- PR Docket 90-55. Their address is 1919 M Street N.W., Washington, DC 20554 -- and *Monitoring Times*.

Those of us who want to see amateur radio continue for many more years hope this action will be acted on promptly. A no-code license will certainly encourage more new comers; just how many more remains to be seen. I hope all of you will support this move.

Cycle 22 Peaks?

The experts are also disagreeing as to the status of the current sunspot cycle. As you may know, sunspots run on an 11 year cycle. When they are at their peak, radio reception is generally at its peak. Well, some observers feel we have passed the peak and are into the downswing. Others think there are still great things to come.

In recent months the flux numbers have steadily declined; so far in 1990 the highest number has been only 265. Highest numbers reached during the present cycle has been 327 back in June of 1989! During November of '89 a low of 138 was recorded.

If conditions continue to slack off with lower numbers, we can expect a down turn in the excellent conditions that we had on six and ten meters. Only time will tell!

World Bank on the Air

The World Bank, located in Washington, DC, has recently been issued the call sign 4U1WB. Operations by World Bank Amateur Radio Club members is mainly on

weekends and lunch hour. The station operates on 80 through 10 meters.

They have a neat QSL and it's well worth the effort of working them.

Walter Cronkite a Ham?

KB2GSD is none other than retired network TV newsman Walter Cronkite. I wonder what his QSL is like?

BY7WGL

Mainland China has a new amateur station in operation at Gullin. The station expects to be quite active on all shortwave amateur bands.

Fuji OSCAR 20

Fuji Oscar 20 was recently put into orbit by the Space Development Agency of Japan (NASDA). The satellite was launched by an H-1 booster from the Tanegashima Space center along with two other payloads: MOS-1B (a Marine Observation satellite)

and DEBUT (experimental unit with deployable booms and an umbrella shaped antenna).

The 435.795 Morse code beacon was heard on the first orbit over Tokyo at 03:09 UTC. After the initial orbit many contacts were heard to take place on the new Oscar.

OF-20, as the new Oscar is called, operates in the following configurations. -- Mode J (uplink 145 MHz, downlink: 435 MHz with analog and digital transponders). Power is one watt. Uplink power required is about 100 watts EIRP.

The digital system (JD) functions as a mailbox using the AX.25 link level protocol.

JA beacon is on 435.795 MHz with output power of 100MW, CW or PSK.

JD telemetry is on 435.910 with one watt of power and packet in PSK.

Scholarships for Hams

With headquarters in Washington, DC, the Foundation for Amateur Radio plans to award thirty-three scholarships for the academic year 1990-91 to assist licensed radio Amateurs.

They may compete for these awards if they plan to pursue a full time course of studies beyond high school and are enrolled in or have been accepted for enrollment at an accredited university, college or technical school.

The awards range from \$500 to \$2,000 with preference given in some cases to residents of specified geographical areas (such as Florida, Maryland, Virginia and Wisconsin) or the pursuit of certain study programs.

Additional information and an application form can be requested by a letter or QSL card postmarked prior to May 31, 1990, from: FAR Scholarships, 6903 Rhode Island Ave, College Park, MD 20740.

DX NEWS

The 5 band DXCC is now endorsable for 17 and 12 meters, in addition to 160, 6 and 2 meters. These endorsements are available only for those who already have qualified for 5BDXCC on the basic 80, 40, 20, 15 and 10 meter bands. Send an SASE to ARRL HQ for endorsement application forms.

The following operations are now being credited for DXCC, LU6ELF/D2 from Angola, and XW8CW, XW8DX, XW8KPL and XW8KPV from Laos.

All XV operations made by Vietnamese nationals last December or after, including XV2A and 3W8AA, are being credited for DXCC. Operations from Vietnam by foreigners may still need to submit documentation to the DXCC desk for accreditation. 3W8BR has done so and his card is acceptable for DXCC.

New Soviet callsigns have been issued for the following. 4K0 Floating Ice Islands, 4K1 Antarctica, 4K2 Franz Josef Land, 4K3 European Arctic Islands other than Franz Josef Land, and 4K4 for Asian Arctic Islands.

Dave, K8MN, (ex-J52US) is back in West Africa in Sierra Leone and is operating from 911SL (club station). Dave expects to have his own 9L1 call soon (possibly 9L1US).

LU6ELF/D2 Jorge, is back in Angola, look for him on 21335 kHz from 2230 to 2300Z, QSL via N4THW.

PA3CXC has a license for Ethiopia and expects to be active from ET in October!

Rumor has it that the HA group who activated 3W and XW8 will be in Burma in the near future. Keep your ears open for this rare one!

TJ/AH6JQ and TJ/N3CRH have been active from Cameroon on the DX net on 21355 kHz at about 2100 UTC.

FT5XA, FT5XH, FT5XI and FT4WB have been active from Kerguelen and Crozet. QSL FT5XA via FD6IT and QSL FT5XH via F2CW.

Think about it!

Everyday, someone complains that he needs a better antenna or rig to work more or better DX. Did you ever think about all the DX that is being worked by mobile stations with low power and antennas only four to 9 feet in length? Any antenna that can be made to take power will work (even very short antennas) and give you plenty of pleasure.

To be sure, bigger is better, but it is possible to do a lot with very short antennas and low power (100 watts or less).

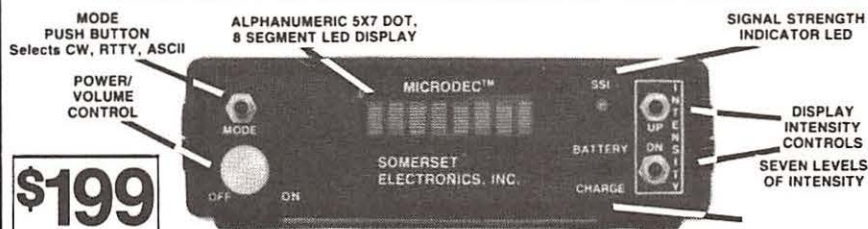
Contacting Ike

When writing to me be sure to use the Brasstown address. I no longer live at the call book address and using it takes several weeks for mail to reach me.

73 - Ike, N3IK



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UFO B:	9.535.000 AM	↓ FREQ DOWN	CUTOFF LEVEL: ^		
MEM # 98:	9.580.000 AM	AM LSB RTTY	DATABASE: INT-BRD		
STEP SIZE:	0.001.000	CW USB FM			
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Evaluator: AUTOSEEK SCANNING ACTIVE				Loops complete: 3	

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Courtesy requires, however, that whenever requesting a reply of a columnist, you enclose a self-addressed, stamped envelope for return postage.

ANTIGUA

Deutsche Welle relay, 6085 kHz. No data QSL card with preprinted signer Peter Senger, and "Programmes and Technology" brochure. Received in 139 days for an English report. Station address: Postfach 10 04 44, D-5000 Köln 1, Federal Republic of Germany. (Robert Landau, Secaucus, NJ)

BANGLADESH

Radio Bangladesh, 15195 kHz. No data color postcard QSL of typical countryside. Verification signer Masudul Hasan, Deputy Director, External Services. Also received "Bangladesh Calling" newsletter. Received in 33 days for a registered English report, three IRCs, and one US dollar. Station address: External Services, P.O. Box No. 2204, Dhaka, Bangladesh. (Robert Landau, Secaucus, NJ)

CHINA

Radio Beijing, 9630 kHz. Full data "Silk Figurine" card and program schedule, without verification signer. Received in 23 days for an English report. Station address: Beijing 100866, China. (Darren White, New Augusta, MS)

FRENCH POLYNESIA

RFO Tahiti, 15170 kHz. Full data QSL card, without verification signer. Photocopies of map and radio-TV station list. Received in 62 days for a French report and three IRCs. Station address: Boite Postal 125, Papeete, Tahiti, French Polynesia. (Robert Landau, Secaucus, NJ)

GUATEMALA

Radio Buenas Nuevas, 4800 kHz. Full data QSL card (small format of TGM1 and qetzal) and station info sheet. Verification signer Israel Rodas M., Gerente. Received in 35 days for a Spanish report and two IRCs. Station address: San Sebastian H. 13020, Huehuetanango, Guatemala. (Robert Landau, Secaucus, NJ)

HONDURAS

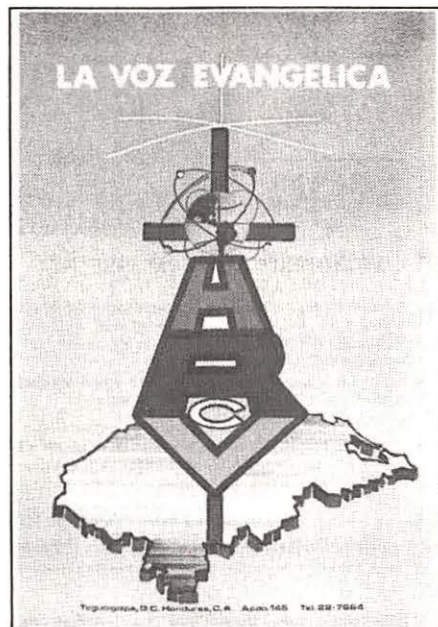
La Voz Evangelica, 4820 kHz. Full data QSL letter and program schedule, without verification signer. QSL letter via Wheaton, Illinois, address, having been forwarded from Tegucigalpa. Received in 21 days for an English report. QSL address: P.O. Box 828, Wheaton, IL 60189. (Nick Terrence, Huntington, NY)

INDIA

All India Radio, 9950 kHz. Full data QSL, station decal, and two souvenir postcards, with verification signer. Received in 28 days for an English report. Station address: P.O. Box 500, New Delhi, India. (Nick Terrence, Huntington, NY)

ITALY

Adventist World Radio, 7125 kHz. Full data QSL card, station news letter, and report form, without verification signer. Received in 36 days for an English report and three IRCs. Station address: P.O. Box 383, 47100 Forlì, Italy. (Darren White, New Augusta, MS)



HRVC, La Voz Evangelica, QSL from Mike Maxson of Toledo, Ohio

PORTUGAL

Radio Free Europe, 11725 kHz. Partial data QSL card, without verification signer. Received in 13 days for an English report and mint stamps. QSL address: 1775 Broadway, New York, NY 10019. (Darren White, New Augusta, MS)

SHIP TRAFFIC

HMAS Moresby # 73 (callsign unknown), 16462 kHz. Royal Australian Naval survey ship. Partial data prepared form card, ship's info fact sheet, two navy booklets, a sticker, and a lapel pin. Verification signer, Lt. Beard-Signal Communication Officer. Received in 48 days for an English utility report, a souvenir postcard and one US dollar for postage. Station address: c/o P.O. Box 228, Rockingham, W.A. 6168 Australia. (Richard Albright, Merced, CA)

M/S Woermann Sankura-DGBP, 16587 kHz (West German container ship). Full data prepared form card, stamped with the ship's stamp and a color photo of the ship. Verification signer, Radio Officer Helwig. Received in 42 days for a German utility report, a souvenir postcard, and one US dollar for postage. Ship address: c/o KS Projex Schiffahrtsgesellschaft mbH & Co., Postfach 11 14 29, 2000 Hamburg 11, Federal Republic of Germany. (Richard Albright, Merced, CA)

M/S St. Nikolai-DGTN, 16587 kHz (West German tanker). Full data prepared form card, radio equipment fact sheet, and a color photo of the ship. Verification signer, Peter Steinmetz, Radio Officer. Received in 43 days for a German utility report, souvenir postcard, and one US dollar for postage. Ship address: c/o Columbus Line, 650 California St., San Francisco, CA 94108. (Richard Albright, Merced, CA)

Leda Maersk-OULU, 15665 kHz (container vessel). Full data prepared form card. Received in 19 days for a utility report and one US dollar. Ship address: c/o Moller a.P., Hammerensgadw 1, DK-

1291 Copenhagen K., Denmark. Danish ship # 90 QSLed! (Hank Holbrook, Dunkirk, MD)

Nurnburg Atlantic-DHNE, 15665 kHz (container vessel). Full data prepared form card. Received in 29 days for an English utility report and return postage. Ship address: Hapag-Lloyd Aktiengesellschaft, Ballindamm 25, Postfach 102626, D-2000 1, Federal Republic of Germany. W. German ship # 160 QSLed! (Hank Holbrook, Dunkirk, MD)

Poseidon-SZRT, 15665 kHz (bulk carrier). Full data prepared form card. Received in nine days for a utility report and one US dollar. ship address: c/o Sea Star Navigation Co., Ltd., Veritas House, 27-31 Hadjikyrikou Street, 18538 Piraeus, Greece. Years since I've QSLed a Greek ship; this is # 68! (Hank Holbrook, Dunkirk, MD) No one QSLs the ships quite like Hank!-ed.

UNITED KINGDOM

Royal Air Force Volmet, 11200 kHz. Full data QSL letter. Verification signer, Jim Campbell. Received in 21 days for an English utility report and mint stamps. Station address: Porter's Way, Room 220, West Drayton, Middlesex UB7 9AX United Kingdom. (Fraser Bonnett, Kettering, OH)

UNITED STATES

KMOX-1120 kHz AM. Full data letter, postcard, and signal coverage map. Verification signer, Paul J. Grundhauser. Received in 15 days for an AM reception report. Station address: One Memorial Drive, St. Louis, MO 63102-2408. (Mike Hawk, Omaha, NE)

KTIV TV-4. Sioux City, Iowa. Full data QSL. Verification signer, Dale Russell, VP/Chief Engineer. Station motto is "Hello from Siouxland." Station address: 3155 Floyd Blvd., Sioux City, Iowa (sorry, no zip listed). (Craig Senfert, New Hampton, NH)

Traverse City Air Station, 5692.0 kHz. Full data prepared QSL card. Verification signer, C. Flowers. Received in eight days for an English utility report and US mint stamps. Station address: US Coast Guard Station, Traverse City, MI 49684. (Fraser Bonnett, Kettering, OH)

WKAR-870 kHz AM. Full data letter and signal coverage map. Verification signer, John Hawkins. Received in 12 days for an AM reception report. Station address: 283 Communication Arts, Michigan State University, East Lansing, MI 48824-1212. (Mike Hawk, Omaha, NE)

WCAW-680 kHz AM. Full data letter and signal coverage map. Verification signer, Dave Higgenbotham, Chief Engineer. Received in 7 days for an AM reception report, 25c, and a SASE. Station address: P.O. Box 4318, Charleston, WV 25304. (Harold Frodge, Midland, MI)

WPTF-680 kHz AM. Partial data letter, schedule, and station sticker. Verification signer Bryan McIntyre, VP/General Manager. Received in 7 days for an AM reception report, 25c, and a SASE. Station address: 3012 Highwoods Blvd., P.O. Box 29521, Raleigh, NC 27626. (Harold Frodge, Midland, MI)

WMLK-9465 kHz. Full data letter and information letter. Verification signer, Jacob O. Meyer. Received in 44 days for an English report. Station address: WMLK, Bethel, PA 19507. (Darren White, New Augusta, MS)

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Back to Basics

For the past six months we uncovered new data modes on shortwave. Some of my articles were high tech and caused some readers to remove their hats in order to scratch their heads in bewilderment.

It's time to get back to basics and with the rainy season upon us, it's a perfect time to grease up the old model 15 and copy some RTTY pictures on 40 meters. For me, a rainy day is a perfect time to reach into the mail bag and answer a few questions like "How come I can't find any RTTY signals outside the amateur bands?"

Usually the question is followed by, "I just purchased an old RTTY decoder and whenever I tune in a signal, I get nothing but gobbledygook on the screen."

A good reason for this is what I have been trying to say all along. There are new RTTY modes out there and the classic decoder is getting obsolete. Don't get me wrong. I'm not trying to discourage you. My point is, you have to do some searching to

find copyable text, but when you find it, the results can be quite rewarding.

It seems that whenever I receive a letter from a *Monitoring Times* subscriber, they usually ask for a "News Wire Service" frequency list. The problem is most of the wire services QSYed (changed frequency) to the satellites.

Things aren't the way they used to be. Back in the sixties you could turn on the old model 15 and listen to the clanking while it typed the news, weather and sports. It was always there any time during the day or night just above the 40 meter band (around 7.430 MHz). But those days are gone.

I have a frequency list to offer but I can't guarantee its accuracy. Many of the services, in the past few years, may have moved to the satellites. Nevertheless, knock your socks off!

NNN

EER "*****"

.COUNCIL OF MINISTERS OF THE USSR--NUCLEAR POWER STATION.
29/4 TASS V 5-19
MOSCOW APRIL 29 TASS AS HAS ALREADY BEEN REPORTED IN
THE PRESS, AN ACCIDENT HAS TAKEN PLACE AT THE CHERNOBYL NUCLEAR
POWER STATION 130 KILOMETERS NORTH OF KIEV. A GOVERNMENT
COMMISSION HEADED BY BORIS SCHERBINA, A DEPUTY CHAIRMAN OF THE
USSR COUNCIL OF MINISTERS, IS WORKING IN THE LOCALITY. IT
INCLUDES THE HEADS OF MINISTRIES AND DEPARTMENTS AND LEADING
SCIENTISTS AND SPECIALISTS.

ACCORDING TO PRELIMINARY DATA, THE ACCIDENT TOOK PLACE IN
ONE OF THE AREAS OF THE 4TH POWER-GENERATING UNIT AND RESULTED
IN THE DESTRUCTION OF PART OF THE STRUCTURAL ELEMENTS OF THE
BUILDING HOUSING THE REACTOR, ITS DAMAGE AND A CERTAIN LEAK OF
RADIOACTIVE SUBSTANCES. THE THREE OTHER POWER-GENERATING UNITS
HAVE BEEN SHUT DOWN. THEY ARE IN ORDER AND IN THE OPERATIONAL
RESERVE. TWO PERSONS WERE KILLED DURING THE ACCIDENT.

PRIORITY MEASURES HAVE BEEN TAKEN TO DEAL WITH THE EFFECTS
OF THE ACCIDENT. THE RADIATION SITUATION AT THE ELECTRIC POWER
STATION AND THE ADJACENT TERRITORY HAS NOW BEEN STABILIZED AND
THE NECESSARY

ZEE CAIRO IS BEING GIVEN TO THOSE AFFECTED. THE
INHABITANTS OF THE NUCLEAR POWER STATION'S SETTLEMENT AND THREE
NEARBY POPULATED LOCALITIES HAVE BEEN EVACUATED.

THE STATE OF THE RADIATION SITUATION AT THE CHERNOBYL
NUCLEAR POWER STATION AND THE ADJACENT TERRITORY IS BEING
MONITORED CONTINUOUSLY.

ITEM ENDS*****

Intercepts from the Past

Even though the News Wire Services are hard to find on HF, you can always tune in TASS (the Soviet news agency) on 14,980 and snag a classic intercept like the one above.

News Wire Services

UTC	FREQ	SHIFT	SPEED	SERVICE	CITY
0000	5460	425	100	VOA	Tangier
0000	6984	425	66	AP	London
0000	10880	425	100	VOA	Monrovia
0000	14974	425	66	AP	London
0000	15875	425	100	VOA	Monrovia
0030	9349	425	66	AP	London
0030	9355	425	100	VOA	Tangier
0030	10959	425	66	Reuters	London
0030	14974	425	66	AP	London
0100	6854	425	66	Reuters	London
0100	6984	425	66	AP	London
0100	9349	425	66	AP	London
0100	10880	425	100	VOA	Monrovia
0100	14526	425	100	VOA	Manilla
0130	10649	425	66	AP	London
0130	10959	425	66	Reuters	London
0130	14516	425	66	Reuters	London
0200	6984	425	66	AP	London
0200	9349	425	66	AP	London
0200	10649	425	66	AP	London
0200	10959	425	66	Reuters	London
0200	14516	425	66	Reuters	London
0200	14974	425	66	AP	London
0200	19520	425	66	UPI	Victoria Is.
0230	6984	425	66	AP	London
0230	9349	425	66	P	London
0230	10959	425	66	Reuters	London
0230	10961	425	66	Reuters	London
0230	14514	425	66	Reuters	London
0230	14974	425	66	AP HQ	London
0300	6984	425	66	AP	London
0300	9119	425	66	Reuters	London
0300	9349	425	66	AP	London
0300	9850	170	100	TASS	Moscow
0300	10649	425	66	AP	London
0300	10959	425	66	Reuters	London
0300	14516	425	66	Reuters	London
0300	14570	425	66	KCNA	Pyongyang
0300	14974	425	66	AP	London
0300	19520	425	66	UPI	Victoria Is.
0330	6984	425	66	AP	London
0330	9349	425	66	AP	London
0330	10959	425	66	Reuters	London
0400	6870	425	66	TASS	Moscow
0400	6984	425	66	AP	London
0400	9349	425	66	AP	London
0400	10649	425	66	AP	London
0400	10961	425	66	Reuters	London
0400	13580	425	66	KCNA	Pyongyang
0400	13582	425	66	KCNA	Pyongyang
0400	13626	425	66	Reuters	London
0400	14974	425	66	AP	London
0400	19520	425	66	UPI	Victoria Is.
0430	9119	425	66	Reuters	London
0430	9362	425	66	Prensa Latina	Havana
0430	10629	425	66	AP	London
0430	10959	425	66	Reuters	London
0430	13624	425	66	Reuters	London
0430	14516	425	66	Reuters	London
0500	6870	425	66	TASS	Moscow
0500	6984	425	66	AP	London
0500	9119	425	66	Reuters	London
0500	9349	425	66	AP	London
0500	10959	425	66	Reuters	London
0500	17510	425	66	TASS	Moscow
0500	18385	425	66	TASS	Moscow
0500	22782	425	66	TASS	Moscow
0530	10645	425	66	AP	London
0530	12085	425	66	TASS	Moscow
0530	14700	425	66	TASS	Moscow
0530	14974	425	66	AP	London
0530	17570	425	66	TASS	Moscow

Satellite Guide via Satellite

For the past several months we've been exploring the world of digital communications via satellite. This month we'll look at a unique product which serves the TVRO community utilizing computer and satellite technology.

It's only appropriate that there's a guide to satellite television programming which actually uses satellite technology as its method of circulation.

It's called SuperGuide, from Triple D Publications, and it's the electronic version of *Onsat Magazine* and *STR Guide* (a weekly and monthly respectively), and also Triple D products.

What sets SuperGuide apart from its brothers in print is essentially two fold: The nature of its electronic delivery via satellite makes up-to-date programming information available to the consumer in days, not weeks. Second, it uses the home dish owner's satellite system for recovery of the data and the consumer's TV set for the display.

Here's How It Works

SuperGuide is digitally transmitted data which is downlinked via G2 Xpnder 2 or S1 Xpnder 18 on a 5.22 MHz subcarrier at a rate of 4800 baud. After hooking the SuperGuide terminal unit to your satellite system and turning your dish to one of the two satellites, the SuperGuide receiver automatically loads the 256 K of information which is transmitted 24 hours a day back to back.

If you have the expanded memory option, you may load the full 512 K of SuperGuide information. The loading procedure takes about ten minutes and may be done once a week or, to catch any changes, twice a week. Each week approximately 400 changes are made in program information.

Once the data is loaded, you may access the text much the way you use a computer bulletin board. But with SuperGuide you use an infrared remote control to actually page through it as you would a printed guide.

Electronic Advantages

What sets this program apart from a paper one is its ability to tailor listings to one's own personal taste commanding it to leave out programming you're not interested in. It also has the ability to pass along up-to-date industry news. This information can be months old by the time it gets to the print subscriber. It's even cheaper than a subscription to a printed guide by about \$10 per year.

The convenience of the device is probably its big attraction. Paging through the guide



Stand-alone receiver with IR-RC for SuperGuide by Triple D Publishing. The electronic satellite guide is delivered to the customers' homes via satellite and displayed on any TV set or video monitor.

with the touch of a button on the IR RC has got to be a Sofa Spud's dream. And, finally, how often has your mail-delivered guide shown up well into the publication week?

More Accessible

Until now the biggest drawback to SuperGuide has been the cost of the initial installation. The basic SuperGuide (256 K memory) retails for around \$230. The optional 512 K memory brings the initial retail price to a little over \$300. Of course, once the basic hardware is paid for, you pay only the \$39 per year subscription fee.

Now even this problem has been taken care of by the integration of SuperGuide into the new Uniden 4800 IRD. For the first time, SuperGuide has been built into a satellite receiver which also has a VC II on board. This model also boasts automatic reprogramming of the guide and full color graphics. That makes the Uniden 4800 a pretty versatile receiver. Pay a visit to your local satellite dealer and check out the SuperGuide stand-alone or integrated system. Or call Triple D Publishing for more information.

For more information on any of the products mentioned, write: Triple D Publications, P.O. Box 167, Shelby, NC 28151-9903. Or call them at 800-234-0023.

MAIL BAG

My thanks to a number of *Monitoring Times* readers who were kind enough to send clippings from their local newspapers

regarding items of interest in the satellite TV business.

Ruth Hesch of Westchester, New York, sent a clipping from the *New York Times* on the task facing the BBC in the emerging era of European satellite television and the changing landscape of British radio. The accompanying photo of an ancient thatched roof cottage with a Ku band dish was interesting.

Roger West of Amery, Wisconsin, sent a clipping from the *St. Paul Pioneer Press Dispatch*. The article heralds the current growth of the TVRO industry and, while peppered with inaccuracies, the article's intentions are good.

A Mr. Kimmerle of Lexington, Kentucky, sent a clipping from the *Computer Shopper* which shows a PC based satellite receiver. The receiver plugs into the computer as would a modem card. The receiver is connected, not to a phone line but to a coax cable leading to an 18" Ku band satellite antenna mounted outdoors. The system, utilizing encrypted software is designed for E-mail for big customers such as retail store chains. It's a one-way system which allows a headquarters to send data and messages to affiliates.

The TVRO Net

Weldon Hogie, W0IHI, of Northfield, Minnesota, enjoys listening to the 20 meter TVRO net which meets each Sunday afternoon at 2:00 p.m. ET on 14.309 USB plus or minus a few kHz. He's in need of a schematic or service manual for a Scientific-

Atlanta Homesat 900 receiver.

Weldon, I checked with the S-A headquarters and they have apparently turned over the home satellite information and repairs to a company called RSI in Idaho. The chief of technicians is Olle Waterburg, and he may be reached at 208-523-5721. Good luck.

Servicing Old Equipment

Those of you who have older satellite receivers or components which were made by companies no longer in business need not despair. There are many companies which repair older equipment.

I have no way of judging their abilities or business practices. Their listing here does not constitute endorsement, but is provided for your information. Let me know what your experiences are or if you have information on others performing a similar service.

Electronic Analysis & Repair

2329 10th Street

Greeley, CO 80631

Phone: 800-444-9594 Offers sales and service -- free estimates -- a flat rate of \$39.95 plus parts.. Also offers free catalog.

Birdview Satellite Service

1407 E. Spruce

Olathe, KS 66061

Phone 913-829-6240 Specializes in Birdview Brand equipment.

JJ National Satellite Sales & Service

2351 S. 2300W

Salt Lake City, UT 84119

Phone: 800-973-6090 or 800-445-9550
Repairs actuators, such as Saginaw, Von Weise and others.

Quality Controlled Electronics, Inc.

Willow Run Airport

Ypsilanti, MI 48198

Phone: (MI) 800-321-0208 Out of state 313-485-4242 Authorized factory service for Uniden, Panasonic and many more. Major repair \$65 + parts -- minor repair \$50 + parts -- IRD \$80 + parts.

Southern Scientific, Inc.

300 Walnut

Fulton, KY 42041

Phone: 502-472-1406 or 472-3704
Service all manner of brands including Amplica.

TRANSPONDER NOTES

The BBC Six O'Clock News is now on W5,16 having moved from W5,15. Why such

GALAXY ELECTRONICS

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216-376-2402

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BC200XLT
200 Channels, 12 band with aircraft & 800 MHz, 10 priority channels, channel lockout, scan delay, automatic search, illuminated LCD display, snap-on battery pack, programmable, track tuning, direct channel access, with AC adapter, leather carry case & earphone.

\$289

FREE

FREE CELLULAR MODIFICATIONS WITH BC-200 & BC-760!!

NEW



BC760XLT 100 channel 12 band base/mobile scanner: with 800 MHz band & Service Scan, Weather, Priority, Lockout, Scan delay, Search, Programmable, Track tuning, Direct ch. access

\$299

NEW

RCI 2900 CALL



24 WATT 10 Meter Transceiver, all mode operation, backlit multi function LCD meter, frequency lock, auto squelch, NB, RF gain, PA, external speaker, jack 7 1/4 W x 9 1/4 D x 2 3/8 H

KENWOOD



RZ-1 WIDEBAND SCANNING RECEIVER
• 500kHz - 905MHz

\$499

TS2 75 channels, 12 bands, Turbo-Scan, bank scan, Accu-Seek, Private Priority, Instant weather, digital display. (29-30, 30-50, 50-54, 118-136, 136-144, 144-148, 148-175, 406-440, 440-450, 806-950MHz)

\$289

SHORTWAVE RADIO

KENWOOD R-5000 100kHz-30mhz, Digital, 100 Memorys	\$849.00
R-2000 150kHz-30mhz, Digital, 10 Memorys	\$649.00
SONY-2010 150kHz-30mhz, 76-108, 118-136mhz	\$359.00
SONY-2003 150kHz-30mhz, Scanning, Memorys	\$259.00
ICOM R-71A 100kHz-30mhz, 32 Memorys	\$849.00
ICOM R-7000 25-2,000mhz, 100 Memorys	\$1049.00
ICOM R-9000 100kHz-2,000mhz, 1000 Memorys	\$4795.00
NRD-525 0.9-34mhz, 200 Memorys, Digital	\$1159.00
FRG-9600 60-905mhz, Continuous, 100 Memorys	\$559.00
FRG-8800 150kHz-30mhz, Memorys, Scans	\$679.00
GRUNDIG-500 1.6-30mhz, Memorys, Scans	\$499.00
KENWOOD RZ-1 1mhz-905mhz, Continuous, 100 Memory	\$499.00
SANGEAN ATS-808 45 Memorys, LCD Display, More!	\$219.00

REGENCY

POLICE/FIRE SCANNERS

BEARCAT BC-200XLT 200ch, 29-54, 118-174, 406-512, 806-952	\$289.00
BC-760XLT 100ch, 29-54, 118-174, 406-512, 806-952	\$299.00
BC-600XLT 100ch, 29-54, 118-174, 406-512, Service Search	\$229.00
BC-100XLT 100ch, 29-54, 118-174, 406-512, Handheld	\$209.00
BC-800XLT 400ch, 29-54, 118-174, 406-512, 806-912	\$269.00
BC-1000XLT Call For Specs and Availability	CALL
BC-210XLT 40ch, 29-54, 118-174, 406-512mhz	\$219.00
REGENCY TS-2 75ch, 29-54, 118-174, 406-512, 806-950	\$289.00
TS-1 35ch, 29-54, 118-174, 406-512, Turbo Scan	\$199.00
INF-2 50ch, Pre-Programmed For All 50 States	\$189.00
INF-5 Pre-Programmed, AC Only, Digital	\$99.00
R-2060 60ch, 29-54, 136-174, 406-512mhz	\$129.00

USED GEAR

28 PAGE 1990 PICTURE CATALOG \$1.00

AIR/POLICE/800 MHz

BUY SELL TRADE

SAME DAY C.O.D. SHIPPING

FREE SHIPPING & INSURANCE!!!

a seemingly unnecessary move is beyond me. It probably has to do with prior commitments on W5,15 which can't guarantee BBC the open transponder at the right time.

Jazz fans will welcome the return of jazz programming from the AM sister station of KKGO-FM Los Angeles. It's still at 5.58 MHz on F4.20. Classical music fans should note KSUR-FM of Monterey, California, at 5.76 also on F4,20.

Believe it or not, rumors persist about the return of the Caribbean Superstation. Informed sources say to watch W5 transponder 4. OK. Well, I'm still watching.

The Satellite Show, previously known as *Saturday Night Satellite* is now seen Thursday through Sunday from 6-7 p.m. ET on S1,18.

Other industry news can be heard daily on C-SAT (S3,9 6.8 MHz audio) Monday through Friday at 7:30 p.m. ET; Saturday at noon and 10 p.m. ET. The SBCA Information Net is heard Sunday through Thursday from 9-11 p.m. ET on the 6.8 MHz audio subcarrier of G1,18.

Television Comes to Radio!

"Let's borrow a few ideas from television! Why can't our format be like 'Good Morning America' or 'The Today Show?' More and more listeners are hearing the excitement generated by Rod Arquette and his staff at KSL Radio 1160 in Salt Lake City, Utah.

"We have a very ambitious format. Other stations sound almost robotic in comparison. Our on-air hosts have more personality, and you can never predict what you will hear. Who said news and information can't be fun? Let's give it all to them, in shorter segments, and let's get into this magazine format."

Mornings on KSL are an amazing potpourri of fast-paced fascinating features. Rod knows that "you can't predict what our audience will

like." Bob Keeshan will be a guest talking about his days as Captain Kangaroo, followed by civil rights leader Ralph Abernathy, and the listener phone calls will continue to pour in.

"KSL is the kind of station that, if you don't check in several times a day, you'll really feel like you've missed something." As program and news director, Rod encourages his reporters to bring events alive for their listeners.

"We're going to continue to take our listeners outside to where news is happening." KSL has broadcast live from President Bush's inaugural in Washington, D.C., disaster scenes after the earthquake in San Francisco, and even Yellowstone National Park. Satellite delivery

of programming can transport KSL listeners almost anywhere.

"If you want to call Lockerbie, Scotland, or Panama, or even send people there, go do it." Arquette is proud that "research shows when events happen, they tune to 1160."

Besides being the home of Brigham Young University Cougars football, KSL is also the place where Utah listens to "The Larry King Show." "I'm a big fan of Larry King," admits Arquette. Late nights on KSL, television literally comes to radio. From midnight to 2 a.m., they rebroadcast the audio of CBS TV's "Nightwatch" with Charlie Rose.

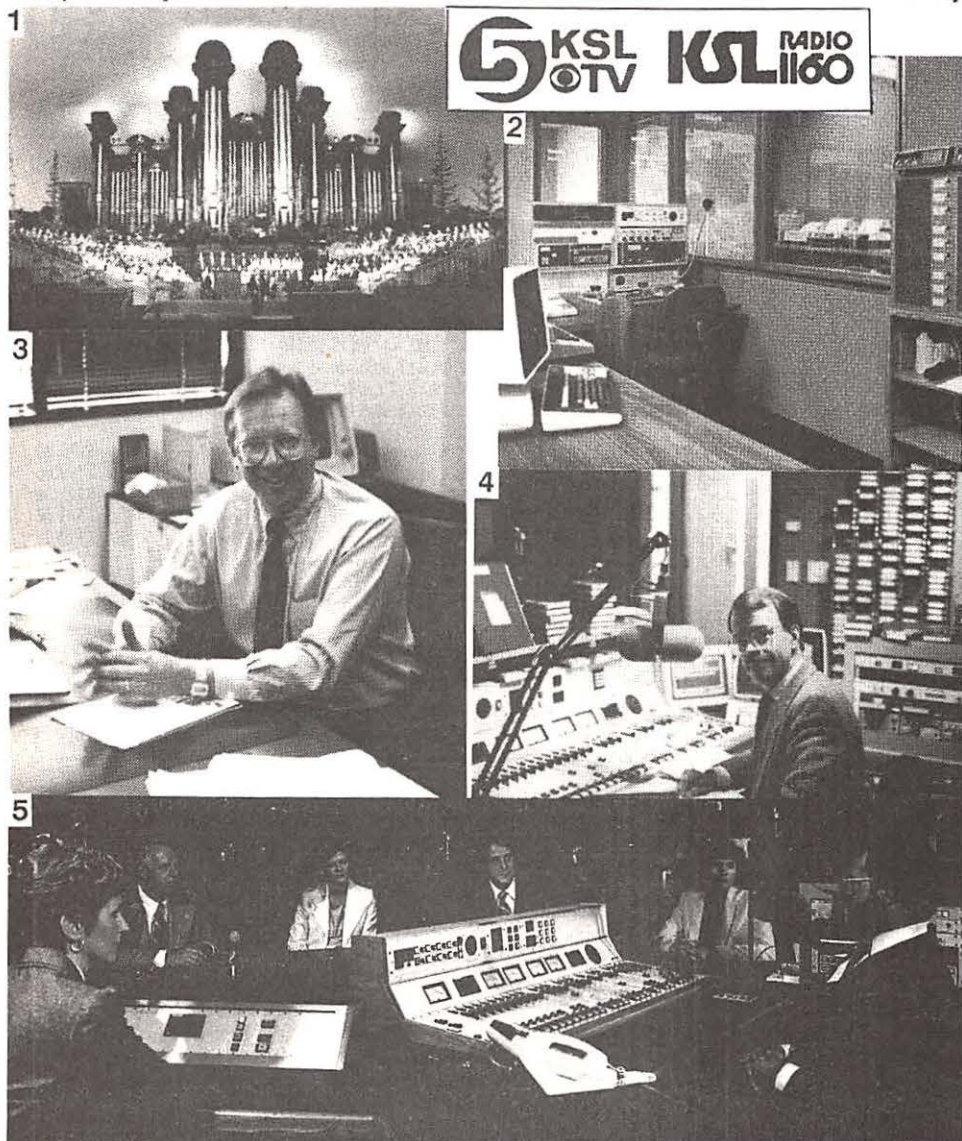
News and information are only part of the success of KSL radio. You'll see the station's call sign wherever you go in the Beehive State, and not just on bus sides and billboards. KSL underwrites performances of the Utah Symphony, The Pioneer Theatre Company, local ski competitions, and many other events. To raise money to buy shoes for needy children, KSL's "Quarters for Christmas" brings yuletide spirit to everyone.

Arquette has learned that "We have to look at the community and what it needs. We should provide quality broadcasting and quality events. Listeners come to us because we can deliver for them. We create an interdependence with the people of Salt Lake City."

If you live west of the Mississippi River, chances are that you've heard KSL Radio. An enormous tower located on the shore of the Great Salt Lake sends their 50,000 watt signal to 100 counties in ten states during the day. At night their signal is beyond measurement, and has been heard by DXers in almost every continent.

KSL first went on the air in 1922 with a 250 watt transmitter, broadcasting from a tower atop the Deseret News Building in downtown Salt Lake City on 1130 kHz. Today's broadcasts originate at the new KSL Broadcast House which is also the home of KSL-TV, Channel 5. Both stations are CBS affiliates, and have been the flagship stations of Bonneville International Corporation, a worldwide telecommunications and financial group, since its inception.

KSL is also the home of the longest continuous broadcast in the free world. "Music and the Spoken Word" is heard weekly on the CBS Radio Network, bringing the voices of The Mormon Tabernacle Choir to listeners nationwide. Hosted by Spencer Kinard, the program has been on the air for 61 years, from historic Temple Square, the home of The Church of Jesus Christ of Latter Day Saints. The Nauvoo Bell, a symbol of the work of the women of the Mormon Church, chimes in just before the CBS hourly newscast.



1. The Mormon Tabernacle choir's "Music and the Spoken Word" is radio's longest running program. 2. WSL has 7 studios, 2 voice booths, and 6 news editor bays. 3. Rod Arquette, Program and News Director for KSL Radio. 4. Bob Lee anchors KSL weekdays from noon to 3 pm. 5. Specially-engineered studios isolate each voice for perfect, concert-hall acoustics.

The future will be even more exciting, Rod claims. "FM is maxed out of formats. How many different versions of play and pay can you have? AM is becoming the place for alternatives and experimentation. We may be getting back to another golden age of radio on AM." KSL is a broadcast giant whose goals and ambitions are as big as its reputation. They are "The News Authority" for the Rocky Mountain West and beyond.

Bits and Pieces

✓ Get to know what's on SAP: The Secondary Audio Program. If you own a stereo TV receiver or VCR, you'll probably hear some amazing alternative programming in the near future. Consult your owner's manual to find out how to hear the SAP channel.

Originally intended for providing bi-lingual soundtracks for programming, this channel is now the medium for descriptions of programs for the sightless, talking book services, aural TV guides, previews of upcoming shows and uncensored movie soundtracks. SAP can also provide a rear third channel for surround-sound broadcasts, and retransmits AM radio stations in some areas. WNET, Channel 13 in New York City, is negotiating to carry The BBC World Service in full fidelity 24 hours a day via SAP. Learn how to hear SAPs today!

✓ The New York State Thruway Authority is planning to install America's longest radio network. A large system of low-powered AM radio information stations is being planned to keep motorists informed of weather and traffic conditions as they travel on I-87 and I-90. Some stations will be part of the nationwide Traveler's Information Service, and others will be unlicensed under FCC Part 15.

Mailbag

✓ Shocking news from Seattle! 50,000 watt KJR Radio broadcasts from towers on the Duwamish River very close to American President Lines' Terminal 5. This is a major site of loading and unloading freight containers for transport. The radio field strength from KJR's transmissions is so strong that longshoremen working with large cranes at the docks are constantly getting shocks.

"It feels like a sting or a bite. There were times when you could actually see it arc," claims dock worker Bob Rogers.

Electrical filters, insulated ladders, and a special paint that absorbs radio waves have been tried with limited success. The Port of Seattle, the owner of the property leased to KJR radio and APL, is now deciding what to do next with this electrifying problem. Hopefully,

reader Hugh Miller in Woodinville, Washington, will keep us up to date as the sparks fly.

✓ WEW in St. Louis is finally moving out of Tom Besch's basement, but things will never be the same. Tom has been host to the station for four years since the original studios burned down. Although he hasn't been charging rent, WEW has filed for Chapter 11 bankruptcy protection and will shortly move to Doug Huber's broadcasting school in Clayton. Gone will be the sounds of Tom's two sheepdogs barking, all the cars in his driveway, and female disk jockeys catching him in his underwear.

WEW will change its format, too. The daytime-only station will transmit a satellite delivered program of show tunes and old-time performers instead of the big band sound St. Louis heard for years. Tom doesn't know what he'll do with his basement, but things will be a lot quieter. Thanks to Raymond Lisk of Richview, Illinois, for introducing us to Tom.

Station Grants

Coming soon to your radio dials are new stations in: Rosamond, CA 890; Silver Springs, FL 95.5; Reidsville, GA 104.1; Trion, GA 95.7; Nappanee, IN 95.7; North Fort Riley, KS 102.5; Rozel, KS 98.7; Midway, KY 107.9; Allegan, MI 92.3; Greenville, MS 104.7; Willard, MO 100.5; Lincoln, NE 105.3; Ocean Acres, NJ 98.5; Columbus, OH 107.5; McConnelsville, OH 100.9; Sioux Falls, SD 101.9; Killington, VT 105.3 and Pullman, WA 88.1. Courtesy of the *M Street Journal*.

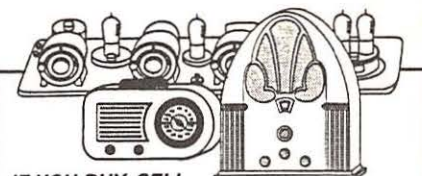
For Sale

Buy a part of an FM station in southwest Texas. All new equipment and a studio building with land are included. Contact: A. Moll at 512-496-0677.

Want something farther north? How about a Class A FM, the only station in its market, in southwest Oklahoma? The owner and operator is looking for someone to take over the payments of \$1426 a month at nine percent interest, and will take the best offer. Call R. Kerr at KRMK in Altus, Ok. 405-482-3966.

A fully equipped Mississippi AM station is for sale. For twenty years it's been the sole provider of broadcasting in this area. The studio, transmitter building and tower are all on the same property that rents for a low \$250 a month. The absentee owner has other interests and wants to sell now. Call J. Clinton at 601-268-7892.

A 1000 watt AM radio station is available in Albertville, Alabama, with a possible increase to 2500 watts likely. The owner is ill and wants to sell. Call Patsy King at 205-586-4160.



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A.R.C., P.O. Box 802-P5, Carlisle, MA 01741

Nashville wants you! A construction permit for a full time AM station, with a great dial position, is ready to go. You could operate with ten kilowatts during the day, non-directional, and 500 watts at night with a directional pattern, and possibly increase your power to a full 50 kilowatts for daytime use, if you move the station within five miles of this city. Call P. Severy now at 615-832-4653.

International Bandscan

If you are visiting Belgium and find yourself yearning for a program in English, try BRT on 1512 kHz from 1830 to 1855 UTC. Czechoslovak Radio's Hvezda channel has been renamed Radio Station Czechoslovakia and given a new signature tune. Look for it on 270 kHz longwave.

Radio France will be expanding the hours of its Radio Bleu service for the over-50-year-old listener to 0600-1800 UTC daily. France Info, the all-news station, moves to nationwide coverage in 1990, and FIP in Paris will extend its hours from 2000 UTC to a sign-off at 2300 UTC.

Radio One has begun broadcasting in Gambia from Banjul, their first FM station. It joins Radio Syd and government-run Radio Gambia, which are on the AM dials. Radio One will be playing nonstop Western and African music. There is very little to listen to if you are tuning the dials in Conakry, Guinea. Transmissions on 1404 kHz have ceased, leaving only 1295 kHz on the air.

Malaysia now has their first commercial FM outlet, Syarikat Mados, broadcasting from Jahor. It will compete with Radio Zoo on 101.6 FM from Batam, Indonesia, and Perfect 10 FM from Singapore. Radio Mediterranean has added an English broadcast from 2230 to 2330 UTC from Malta on 1557 kHz. Another Maltese station, The Voice of the Mediterranean also broadcasts in English on 1557 kHz from 0600 to 0700 UTC.

Credits: Many thanks to readers Hugh Miller, David K. Parsons, W.E. Doan, Kevin Carey, John Carson Jr., Herb Gezell, Tom Czaja, Allen Lesser, Garie Halstead, Raymond Lisk, John Gould, David Brown Jr., M.L. Cauthon III, Stephen Moore, and Ruth Hesch. Also thanks to *Radio World*, *FMedia*, the *M Street Journal*, The British DX Club and The Worldwide TV-FM DX Association. Until next month, happy trails!

What Happens When a Canned Pineapple Sings?

It is too early to tell, but the tune may not be to everyone's liking. At least that is what Pennsylvania's John Demmitt believes. Former Panamanian ruler Manuel Noriega, in the course of his legal defense, could reveal matters that some folks would just as soon have go unsaid. Among other things, we should not be totally shocked if Noriega is linked to several of the numbers stations and even one American military frequency.

Noriega has been involved in just about everything, including the Contras, narcotics and more. Undoubtedly, people both north and south of the border may be losing some sleep these days. You may see more about this in the media, but at least one CBS correspondent in Panama had a big lead on this story and failed to follow up on it.

Meanwhile for those who want to do a little digging on their own, you might gather a few clues from the book, *Out of Control*, by Leslie Cockburn. Of course, first you will have to locate a copy. That may not be too easy. You will understand why if you find one.

Caroline Update

Is Caroline back on shortwave? Ary Boender in the Netherlands reports reception of a very weak signal on Caroline's old shortwave frequency of 6215. The station is playing music. No one knows what it really is, but Ary claims the most optimistic Caroline freaks are convinced it is the Lady herself.

Caroline continues to put in a good signal on 558 kHz mediumwave. On 6215 Ary reports transmissions of a maritime system called the "Future Maritime Distress and Safety System." Is this at least partly designed to deny Caroline future use of that frequency?

Meanwhile England's John Goodliffe reports that Britain's Radio Investigation Service was planning a second raid on Caroline. This time it intended to tow the station's ship, the *Ross Revenge*, into port.

However, there were so many complaints to members of parliament by Caroline supporters that the raid was called off. Caroline's lawyers add that the Radio Investigation Service will face charges of piracy!

Elsewhere in Europe:

John notes that approximately thirty FM pirates are on the air in the London area every week, in spite of increased raids. One London Greek pirate was raided every day for months in an effort to shut it down. Sometimes it was raided twice in one day. Birmingham has about eight regular FM pirates.

An anonymous English contributor writes to say he has logged several of the Birmingham stations. Among his catches are PCRL, which has been raided over 100 times. He reports also hearing Power House, UK Radio, Supreme and a number of others.

Ary Boender says a few Irish pirates still continue. They include Radio Dublin (but not on shortwave at present), Radio Star County and North Side Radio. A few local stations have obtained licenses. They include Horizon Radio and International Commercial Channel Central Radio.

Closer to Home:

Everybody is hearing Hope Radio International these days. Among them are Gregg Doerschler of Massachusetts who found them on 7412 at 0400. This writer bagged them nearby on 7415 and also managed to get a QSL. In addition to the Slanesville, West Virginia, drop, Hope Radio announces an address of Box 495, Mossy Head, Florida 32434.

Kentucky's David Fields sent a very nice report on reception of Hope Radio and included details on their DX program. On 7414 kHz he found pirates WHBH and WRFI, the Voice of Radio Free Intelligence.

Up in Minnesota Alan Masyga came across one on 7415 that has to be considered a legendary broadcaster. This was the famous Voice of Laryngitis. If you catch a VOL program, you have a real treat in store. This gang does very creative stuff. Alan also caught Radio Free Indiana on 7416. It can be reached via Box 628, Slanesville, WV 25444.

We had heard a vague report that WENJ may have been closed down. If true, it is now back. Fraser Bonnett has logged them twice on 7415 from his Ohio location. Fraser seems to hear just about everything that is around. He monitored Radio Free Willy on 7415 at 0339 and WYOY on the same frequency.

The Official Radio Caroline Newsline

0836 404 558

Updated Weekly

Calls charged at 25p per minute cheap rate
and 38p per minute other times

If you are willing to pay for a trans-Atlantic call, John Goodliffe says you can call up Radio Caroline and get all the latest news about the station.



Radio Free Mass.

BARRY J. ROWAN
, PA.

SEPT 4, 89

03:42 UTC

7415 KHz

by H. V. St...

QSL # 11

Pennsylvania's Barry Rowan got this impressive QSL from Radio Free Massachusetts.

Nick Grace of Massachusetts deserves some sort of award for the tremendous number of catches he has had. Eskimo chants? Yes, he found them on WXZR Meontological Research Radio, which was using 7435 and 7425. He also heard Radio Mexico on 7485. Radio Mexico transmits in Spanish but appears to be an American pirate. It was doing a joint broadcast with WXZR.

Among other logs, Nick has Radio Garbanzo on 7486, WKND on 6240, and a transmission of Radio Free Willy on 7406 at 0443 which was also heard in California. He found East Coast Pirate Radio on 7485 at 0456.

This writer came across Pirate Radio UK on 15063 at 2047 sign-off and East Coast Pirate Radio on the same frequency with a 2057 sign-off another day. A PRUK report was QSLed with an ECPR QSL, so it appears ECPR either produces or relays PRUK. Voice of the North was found on 15047 at 1905, and Scotland's Weekend Music Radio made it in here again on 15043.

Clandestine Thoughts:

The anti-Castro program, "La Voz de la Fundacion," can currently be heard via WHRI between 0100 and 0200 on 7315 kHz.

California's Mike Fern is an outstanding clandestine DXer. Among his most intriguing catches is the Voice of

Democratic Kampuchea on 9440 between 0000 and 0030 UTC. This is the station of the Khmer Rouge insurgents who are trying to get rid of the Vietnamese-supported regime.

Mike has found five-digit cipher traffic on Radio Venceremos, but not the six-digit traffic this writer reported in an earlier column. He suggests the six-digit material might be based on a dictionary-type code. The least suspicious place for a source of random numbers needed for this just might be the San Salvador phone book.

The Contras continue. Fraser Bonnett logged Radio Quince de Septiembre on 6215 at 0015. From Kansas, Richard Hankison inquired where he might send his recent reception report of anti-Castro La Voz del CID. Try Apartado 8130, San Jose 1000, Costa Rica. Many readers should get good signals on 9942 kHz from this one.

The strangest log of the month is probably the one contributed by Dave Fields. He heard a female voice on 7413 kHz in LSB. She repeated over and over again what sounded like the words "I see the rhapsody." Ideas, anyone?

Finally, reports indicate Cuba has all kinds of tricks up its sleeve if Washington goes ahead with the planned TV-Martí broadcasts. Monitoring the mediumwave bands could prove quite interesting when such transmissions begin.



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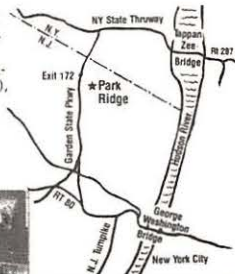
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Elusive Loggings

When this column first began, the only lists of loggings readily available were my own. Now I am beginning to receive loggings from some readers.

Many times the reader is asking for help in identification of some of the beacons he has heard. I try to do what I can in this respect. Then I began to realize that there aren't many places where a DXer can find beacon loggings to see what is being heard.

Except for only a couple of clubs, beacon loggings will be few, if any, in most magazines and club bulletins. So I am starting to include some selected loggings to help you get a feeling for what is actually out there.

This month's loggings were drawn from a list sent in by Tom Humes of Mesa, Arizona. These were heard on a Kenwood R-2000, using a longwire antenna that was 15 feet high and 100 feet long. Judging from his list, both receiver and antenna were performing quite well.

All of these, plus others, were logged over a period of a week. There are more than a dozen states plus Mexico and Canada. This gives some idea of how you can reach out while DXing beacons. Like broadcast band DXing, you deal more in states and provinces than in countries. But this can be equally exciting.

Note the loggings for Fresno and Reno. They were heard with voice weather broadcasts. There used to be a lot of beacons with transcribed weather transmissions. But these are being discontinued in many locations. Logging a weather transmission these days is like taking a picture of an endangered species. You have to get them while you still can.

Tom noted that the L and the V alternated on 302. These are sequenced marine beacons. Point Loma is supposed to operate at minutes one and four of every six, while Point Vicente transmits during minutes two and five. A third beacon, "O," at Point Arguello operates at minutes three and six. Minute one starts at the hour and every sixth minute thereafter -- 06, 12, 18 past the hour, etc.

I was in the Los Angeles area recently and noted both L and V. The third beacon was never heard and the time

sequences for the other two beacons wandered all over. At one stage, both were transmitting simultaneously with only a few seconds difference in their timing. Both beacons varied from the assigned times.

Notice the ID on 368 for the Mexican beacon. Actually, GYM is the proper ID for this beacon. Tom heard it with an E trailing the GYM after a short pause. This is used to indicate a secondary transmitter is being used.

Many times beacons are in more remote areas, several miles from the airport they serve. They serve as guides to a spot from which to make an approach to the airport. Thus, they are not necessarily visited unless they need maintenance. It is important to keep the beacon going, so, if the primary transmitter fails, a secondary transmitter automatically begins operating. The trailing E is part of the secondary transmitter ID and the airport now knows that the primary transmitter must be repaired.

Tom had trouble identifying the NY beacon on 350. He thought it had a third character; in this case it was a six-second tone. This is typical of Canadian beacons. The ID is followed by a long tone. It becomes a quick tip-off that what you are hearing is Canadian. This is frequently described as DAID or "dash after ID."

You may also see the description DA2ID or DA3ID, meaning that the dash,

or long tone, occurs after two or three IDs in a group. The U.S. marine beacons operate slightly differently. They send their ID for the first 50 seconds in each minute, followed by a long tone of 10 seconds duration. If the beacon is continuous, it then reverts back to the repetitive ID sequence at the start of the next minute.

The other beacon on 350 is a different problem. There is no official listing of a beacon with this ID on this or any other frequency in the U.S. However, NID is the airport identifier for the naval station at China Lake. There is no beacon listed for China Lake, so this could be the beacon for that airport.

Yuma is yet another situation. The current official listing of the Yuma beacon on 413 calls for the identifier to be LGF. The ID of OEG was used for Yuma in the past. They may be changing back to OEG; they may have used it temporarily for some specific reason; or it may have been a maintenance change by mistake. Time will establish the permanence of using OEG.

We won't always go into this much detail with individual loggings. This just seemed an excellent opportunity to illustrate some of the things you may find in beacon DXing. So, send in your loggings to show others what you are hearing and to see what other people are hearing. We all benefit that way.

mt

BEACON LOGGINGS

224	SDL	Scottsdale, AZ	350	NID	China Lake, CA??
254	SPK	Reno, NV w/wx	359	BO	Boise, ID
290	AOP	Rock Springs, WY	368	GYM-E	Guaymas, MEX
294	BMC	Brigham City, UT	371	ITU	Great Falls, MT
302	L	Point Loma LS, CA	375	HPL	Nucla, CO
302	V	Point Vicente Light, CA	380	BBD	Brady, TX
311	BFE	Brownsville, TX	383	CNP	Chappell, NE
311	MVI	Monte Vista, CO	387	SZY	Selmer, TN
320	MTN	Miles City, MT	393	FBG	Ft. Bragg, NC
322	S	Point Sur, CA	396	LGX	Lovington, NM
326	MCY	Mercury, NV	397	LLJ	Challis, ID
329	TAD	Trinidad, CO	400	LKO	Billings, MT
340	BDG	Blanding, UT	410	DAO	Ft. Huachuca, AZ
344	FCH	Fresno, CA w/wx	413	OEG(?)	Yuma, AZ
350	NY	Enderby, BC	417	RGB	Rifle, CO

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Sunday

April 1st, 8th, 15th, 22nd, 29th

- 0030 BBC: Composer of the Month. Profiles of great composers and selections from their works.
- 0037 Radio Netherlands: Newline. News analysis from correspondents worldwide.
- 0040 HCJB (North America): Sounds of the Times. Ideas and opinions of North American young people.
- 0045 HCJB (North America): Focus 2000. A program about science and technology.
- 0052 Radio Netherlands: Over to You. A listener contact program with Barry O'Dwyer.
- 0101 BBC: Play of the Week. Hour-long drama selections.
- 0105 HCJB (North America): Discovery. A scientific exploration of the world.
- 0109 Deutsche Welle: Commentary. Opinion on current issues.
- 0113 Deutsche Welle: Sports Report. The latest news from the world of sports.
- 0117 Deutsche Welle: Mailbag/To the Top/Checkpoint. Listener letters, music, and features on a rotating basis.
- 0130 HCJB (North America): Family Foundations. Interviews and discussions about issues



Jorge Zambrano, producer/host of "Musica del Ecuador" on HCJB.

- affecting today's family.
- 0134 Deutsche Welle: German by Radio. An advanced German language course for English speakers.
- 0200 HCJB: Get Set. Interviews and features from the world of sports.
- 0209 BBC: British Press Review. Survey of editorial opinion in the British press.
- 0209 Deutsche Welle: Commentary. See S 0109.
- 0213 Deutsche Welle: Sports Report. See S 0113.
- 0215 BBC: Feature. Programming on various subjects.
- 0215 HCJB: Lifelines. Music, drama, and a topical talk.
- 0216 Deutsche Welle: Asia in the German Press. A look at what German papers and weeklies have to say about Asia.
- 0223 Deutsche Welle: Mailbag Asia. Answers to listeners' queries, musical requests, and the club corner.
- 0230 BBC: The Ken Bruce Show. A mix of popular music and entertainment news.
- 0230 HCJB: Happiness Is. Interviews, books, travel logs, and more.
- 0305 HCJB: Hour of Decision. Billy Graham's radio evangelical program.
- 0309 Deutsche Welle: Commentary. See S 0109.
- 0313 Deutsche Welle: Sports Report. See S 0113.
- 0315 BBC: From Our Own Correspondent. In-depth news stories from correspondents worldwide.
- 0317 Deutsche Welle: Mailbag/To the Top/Checkpoint. See S 0117.
- 0330 BBC: Quiz. A quiz show of a topical nature.
- 0330 HCJB: The King Is Coming. A religious program.
- 0330 Deutsche Welle: German by Radio. See S 0134.
- 0330 Radio Netherlands: Newline. See S 0037.
- 0352 Radio Netherlands: Over to You. See S 0052.
- 0400 HCJB: Radio Reading Room. Readings from new Christian books.
- 0409 Deutsche Welle: Commentary. See S 0109.
- 0413 Deutsche Welle: Sports Report. See S 0113.
- 0419 Deutsche Welle: International Talking Point. A round-table discussion on major trends and events.
- 0430 BBC: Feature. Programming on various subjects.
- 0430 Radio Netherlands: Sunday Spotlight. A look at events and issues affecting Africa over the past week.
- 0434 Deutsche Welle: People and Places. A program for Africa with interviews, stories, and music.
- 0445 BBC: Personal View. A personal opinion on topical issues in British life.

- 0505 HCJB: Discovery. See S 0105.
- 0509 BBC: Twenty-Four Hours. Analysis of the main news of the day.
- 0509 Deutsche Welle: Commentary. See S 0109.
- 0513 Deutsche Welle: Sports Report. See S 0113.
- 0517 Deutsche Welle: Mailbag/To the Top/Checkpoint. See S 0117.
- 0530 BBC: Financial Review. A look back at the financial week.
- 0530 HCJB: Family Foundations. See S 0130.
- 0534 Deutsche Welle: German by Radio. See S 0134.
- 0540 BBC: Words of Faith. People share how their scripture gives meaning to their lives.
- 0545 BBC: Letter from America. Alistair Cooke's distinctly British view of America.
- 0600 HCJB: Get Set. See S 0200.
- 0609 Deutsche Welle: Commentary. See S 0109.
- 0613 Deutsche Welle: Sports Report. See S 0113.
- 0615 HCJB: Lifelines. See S 0215.
- 0619 Deutsche Welle: International Talking Point. See S 0419.
- 0630 BBC: Jazz for the Asking. A jazz music request show.
- 0630 HCJB: Open Door. Contemporary music and thoughts for teenagers.
- 0634 Deutsche Welle: People and Places. See S 0434.
- 0709 BBC: Twenty-Four Hours. See S 0509.
- 0730 BBC: From Our Own Correspondent. See S 0315.
- 0730 Radio Netherlands: Happy Station. Tom Meyer's family entertainment program with music and letters.
- 0745 BBC: Book Choice. Short reviews of current or future best-sellers.
- 0750 BBC: Waveguide. How to hear the BBC better.
- 1100 HCJB: Music in the Night. Religious music and inspiration.
- 1109 Deutsche Welle: Arts on the Air. Reports and interviews on major cultural events and developments.

LEGEND

- * The first four digits of an entry are the program start time in UTC.
- * The time is followed by the station name, program name, and a brief summary of the program's content.
- * Some listings may be followed by "See X 0000." The letter stands for a day of the week:

S=Sunday M=Monday
T=Tuesday W=Wednesday
H=Thursday F=Friday
A=Saturday

The four digits stand for a time in UTC. Listeners should check back to that date and time to find out more about that particular program.

- * All broadcasts are listed in chronological order, starting on Sunday at 0000 UTC and ending on Saturday at 2359 UTC.
- * All days are in UTC. Remember that if you are listening in North

American prime time, it is actually the next morning UTC. For example, if you are listening to a program at 7:01 pm [EST] on your Thursday night, that's equal to 0001 UTC and therefore Friday morning UTC.

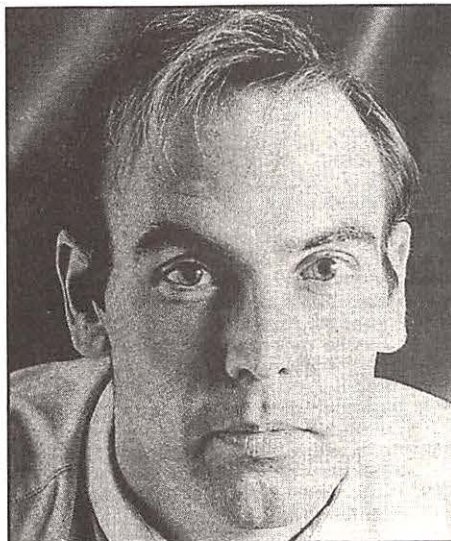
We suggest that you tune in to a program a few minutes before the schedule start time, as some stations have tentative schedules which may slightly vary. We invite listeners and stations to send program information to the program manager at the address above.

program

guide

- 1115 BBC: From Our Own Correspondent. See S 0315.
- 1130 BBC: Composer of the Month. See S 0030.
- 1130 HCJB: Morning Song. Music and thoughts to start the day.
- 1130 Radio Netherlands: Happy Station. See S 0730.
- 1134 Deutsche Welle: German by Radio. See S 0134.
- 1200 HCJB: Urban Alternative. A program for inner-city America.
- 1201 BBC: Play of the Week. See S 0101.
- 1230 HCJB: Happiness Is. See S 0230.
- 1300 HCJB: Mountain Meditations. Sunday thoughts from HCJB's president.
- 1309 BBC: Twenty-Four Hours. See S 0509.
- 1330 BBC: Sports Roundup. The day's sports news.
- 1330 HCJB: Telling the Truth. Stuart Briscoe presents a religious program.
- 1345 BBC: Personal View. See S 0445.
- 1400 HCJB: Kids' Corner. Mr. Lizard and friends present a program for children.
- 1401 BBC: Feature. Programming on various subjects.
- 1406 Radio Peace and Progress: Commentary and Reports. News dispatches and analysis.
- 1425 Radio Peace and Progress: Music. Selections from various tunes.
- 1430 BBC: Anything Goes. Sounds from the BBC archives as requested by listeners.
- 1430 HCJB: Your Story Hour. Stories about character for children.
- 1430 Radio Netherlands: Happy Station. See S 0730.
- 1500 HCJB: Songtime. John DeBrine mixes music with a religious message.
- 1509 Deutsche Welle: Religion and Society. A roundup of news and developments concerning the world's major religions.
- 1513 Deutsche Welle: Africa in the German Press. A look at what German papers and weeklies have to say about Africa.
- 1515 BBC: Concert Hall. Classical music performances from the world's great halls.
- 1530 HCJB: Let My People Think. A program addressing questions of today's thinker.
- 1534 Deutsche Welle: Pop from Germany. A look at the German pop music scene.
- 1600 HCJB: Unshackled. The melodramatic program about lives changed by religion.
- 1609 Deutsche Welle: Arts on the Air. See S 1109.
- 1615 BBC: Feature. Programming on various subjects.
- 1630 Radio Netherlands: Happy Station. See S 0730.

- 1634 Deutsche Welle: German by Radio. See S 0134.
- 1636 Radio Peace and Progress: Commentary and Reports. See S 1406.
- 1645 BBC: Letter from America. See S 0545.



New kid on the block: Jonathan Izard is among the most recent additions to the BBC's news reading team.

- 1655 Radio Peace and Progress: Music. See S 1425.
- 2305 BBC: Words of Faith. See S 0540.
- 2310 BBC: Book Choice. See S 0745.
- 2315 BBC: Letter from America. See S 0545.
- 2330 BBC: Feature. See S 1401.

Monday

April 2nd, 9th, 16th, 23rd, 30th

- 0030 BBC: In Praise of God. A half-hour program of worship.
- 0030 Radio Netherlands: Happy Station. See S 0730.
- 0040 HCJB (North America): Answers. Answers to questions on science and the Bible.
- 0055 HCJB (North America): Sounds of the Times.

- See S 0040.
- 0100 HCJB (North America): HCJB Today. News about the ministries of HCJB.
- 0101 BBC: Feature. Programming on various subjects.
- 0109 Deutsche Welle: Commentary. See S 0109.
- 0116 Deutsche Welle: Religion and Society. See S 1509.
- 0122 Deutsche Welle: Letter from Bonn/Berlin. The tale of two cities as seen by Deutsche Welle correspondents.
- 0126 Deutsche Welle: International Talking Point. See S 0419.
- 0135 HCJB (North America): Passport. News, music, and special features on Ecuador and the world.
- 0145 BBC: Musical Feature. A program on a musical topic (except April 2nd: Composer Cameos, a look at composers without reputations).
- 0200 HCJB: Musica del Ecuador. Andean music with Jorge Zambrano.
- 0209 BBC: British Press Review. See S 0209.
- 0209 Deutsche Welle: Morning Magazine. A magazine program with background information on major world events.
- 0215 BBC: Andy Kershaw's World of Music. Exotic and innovative music from the world over.
- 0230 BBC: Science In Action. The latest in scientific developments.
- 0230 HCJB: Happiness Is. See S 0230.
- 0234 Deutsche Welle: Science and Technology. New scientific and tech developments.
- 0300 HCJB: The Sower. Michael Guido presents music and inspiration.
- 0309 Deutsche Welle: Commentary. See S 0109.
- 0315 BBC: Good Books. A recommendation of a book to read.
- 0315 HCJB: Youth Time Radio. Interviews and music for college students.
- 0316 Deutsche Welle: Religion and Society. See S 1509.
- 0322 Deutsche Welle: Letter from Bonn/Berlin. See M 0122.
- 0326 Deutsche Welle: International Talking Point. See S 0419.
- 0330 BBC: Anything Goes. See S 1430.
- 0330 HCJB: Hour of Freedom. A religious message presented by Howard Jones.
- 0330 Radio Netherlands: Happy Station. See S 0730.
- 0405 HCJB: Music in the Night. See S 1100.
- 0409 Deutsche Welle: Morning Magazine. See M 0209.
- 0430 BBC: Off the Shelf. A reading selected from the best of world literature.

NEWS GUIDE

This is your guide to news broadcasts on the air. All broadcasts are daily unless otherwise noted by brackets. These brackets enclose day codes denoting days of broadcast. The codes are as follows:

S = Sunday
T = Tuesday
H = Thursday
A = Saturday
M = Monday
W = Wednesday
F = Friday

We invite listeners and stations to send program information to the program manager.

- 0000 BBC: Newdesk
- 0000 Christian Science Monitor: News
- 0000 Kol Israel: News
- 0000 KVOH: UPI News [T-A]
- 0000 Radio Australia: International Report
- 0000 Radio Beijing: News
- 0000 Radio Canada Int'l: News[S-M]; World at 6[T-A]
- 0000 Radio Havana Cuba: Int'l News [M-A]
- 0000 Radio Moscow: News
- 0000 Radio New Zealand Int'l: News
- 0000 Radio Yugoslavia: News
- 0000 Spanish National Radio: News
- 0000 Voice of America: News
- 0000 WWCR: USA Radio News [M-F]
- 0000 Radio Pyongyang: News
- 0010 Radio Beijing: News About China
- 0030 Christian Science Monitor: News [T-F]
- 0030 Radio Budapest: News
- 0030 Radio Canada Int'l: News [S-M]
- 0030 Radio Havana Cuba: Newsbreak [M-A]
- 0030 Radio Moscow (World Service): News in Brief
- 0030 Radio Netherlands: News [T-S]
- 0030 Voice of America (Americas, E.Asia): News (Special English) [T-S]
- 0030 Voice of America (E.Asia): News (Special English) [M]
- 0045 Radio Berlin Int'l: News
- 0051 Spanish National Radio: News Summary [S]
- 0055 KUSW: News [T-S]
- 0055 WRNO: ABC News [W-H, A]
- 0100 BBC: News Summary
- 0100 Belize Radio One: Network News
- 0100 Christian Science Monitor: News
- 0100 Deutsche Welle: World News
- 0100 Kol Israel: News
- 0100 KVOH: UPI Radio News [T-A]
- 0100 Radio Australia: World and Australian News
- 0100 Radio Canada Int'l: News [S-M]
- 0100 Radio Havana Cuba: Int'l News [M-A]
- 0100 Radio Japan: News
- 0100 Radio Moscow: News
- 0100 Radio New Zealand Int'l: News
- 0100 Radio Prague: News
- 0100 Radiotelevisione Italiana: News
- 0100 Spanish National Radio: News
- 0100 Voice of America: News
- 0100 Voice of Indonesia: News
- 0100 WWCR: USA Radio News [T-S]
- 0115 Radio Havana Cuba: Cuban Nat'l News [M-A]
- 0130 Christian Science Monitor: News [T-F]
- 0130 Radio Budapest: News
- 0130 Radio Havana Cuba: News [M-A]

program

guide



*Bush House at night;
QSL from Ray Labrie of New
Hampshire.*

- 0434 Deutsche Welle: Africa Report. Reports and background to the news from correspondents.
- 0437 Radio Netherlands: Newslines. See S 0037.
- 0445 BBC: Talks. Short talks on various subjects.
- 0505 HCJB: Passport. See M 0135.
- 0509 BBC: Twenty-Four Hours. See S 0509.
- 0509 Deutsche Welle: Commentary. See S 0109.
- 0516 Deutsche Welle: Religion and Society. See S 1509.
- 0522 Deutsche Welle: Letter from Bonn/Berlin. See M 0122.
- 0526 Deutsche Welle: International Talking Point. See S 0419.
- 0530 BBC: Waveguide. See S 0750.
- 0530 HCJB: Musica del Ecuador. See M 0200.
- 0540 BBC: Words of Faith. See S 0540.
- 0545 BBC: Recording of the Week. A personal choice from the latest classical music releases.
- 0600 HCJB: HCJB Today. See M 0100.
- 0609 Deutsche Welle: Morning Magazine. See M 0209.
- 0630 BBC: Feature. See S 1401.
- 0630 HCJB: Music in the Night. See S 1100.
- 0634 Deutsche Welle: Africa Report. See M 0434.
- 0709 BBC: Twenty-Four Hours. See S 0509.
- 0730 BBC: Feature. See S 1615.
- 0737 Radio Netherlands: Newslines. See S 0037.
- 0752 Radio Netherlands: The Research File. A science and technology review, covering the latest discoveries and developments.
- 1100 HCJB: Music in the Night. See S 1100.
- 1109 Deutsche Welle: Newslines Cologne. A current affairs program with worldwide reports and a German press review.
- 1115 BBC: Health Matters. New developments in the world of medical science and fitness.

- 1130 BBC: The Ken Bruce Show. See S 0230.
- 1130 HCJB: Insight for Living. Charles Swindoll applies the Bible to life today.
- 1134 Deutsche Welle: Hallo Africa. Musical requests and greetings to friends.
- 1137 Radio Netherlands: Newslines. See S 0037.
- 1144 Deutsche Welle: Weekend Sport. A review of the major sporting events of the weekend.
- 1152 Radio Netherlands: The Research File. See M 0752.
- 1200 HCJB: Sound Words. Gil Rugh presents religious advice.
- 1215 BBC: Quiz. A quiz show to be announced.
- 1230 HCJB: Happiness Is. See S 0230.
- 1245 BBC: Sports Roundup. See S 1330.
- 1300 HCJB: Stories of Great Christians. Dramatized stories about Christian leaders past and present.
- 1309 BBC: Twenty-Four Hours. See S 0509.
- 1315 HCJB: Our Daily Bread. Devotions from the Bible.
- 1330 BBC: Feature. See S 1615.
- 1330 HCJB: Morning in the Mountains. A live show of music and thoughts.
- 1405 BBC: Outlook. Conversation, controversy, and color from Britain and the rest of the world.
- 1406 Radio Peace and Progress: Commentary and Reports. See S 1406.
- 1425 Radio Peace and Progress: Music. See S 1425.
- 1430 BBC: Off the Shelf. See M 0430.
- 1430 HCJB: Through the Bible. J. Vernon McGee presents a book-by-book study of the Bible.
- 1437 Radio Netherlands: Newslines. See S 0037.
- 1445 BBC: Feature. See S 0215.
- 1452 Radio Netherlands: The Research File. See M 0752.

- 1500 HCJB: Joni and Friends. Help and advice, especially for the disabled, as offered by Joni Erickson-Tada.
- 1505 HCJB: Shalom. A search for true peace in today's complex world.
- 1509 Deutsche Welle: Newslines Cologne. See M 1109.
- 1515 BBC: Feature (except April 2nd: Composer Cameos). See M 0101.
- 1520 HCJB: Psychiatry and You. Christian perspectives on dealing with personal problems.
- 1529 Deutsche Welle: Weekend Sport. See M 1144.
- 1530 HCJB: Back to the Bible. A daily Bible study.
- 1538 Deutsche Welle: Monday Special. An interview or report on an event or development with special relevance for Africa.
- 1600 HCJB: Focus on the Family. A daily look at marriage, parenting, and social trends that affect the family.
- 1609 Deutsche Welle: Newslines Cologne. See M 1109.
- 1615 BBC: Good Books. See M 0315.
- 1630 BBC: Health Matters. See M 1115.
- 1634 Deutsche Welle: Asia-Pacific Report. Correspondents' reports, interviews, and background news from the Asia-Pacific region.
- 1636 Radio Peace and Progress: Commentary and Reports. See S 1406.
- 1637 Radio Netherlands: Newslines. See S 0037.
- 1645 BBC: The World Today. News analysis on a selected location or event in the news.
- 1652 Radio Netherlands: The Research File. See M 0752.
- 1655 Radio Peace and Progress: Music. See S 1425.
- 2305 BBC: Commentary. Background to the news from a wide range of specialists.
- 2310 BBC: Financial News. News of commodity prices and significant moves in currency and stock markets.
- 2315 BBC: Feature. Programming on various subjects.
- 2330 BBC: Multitrack 1. Tim Smith presents what's hot on the British pop music charts.

Tuesday

April 3rd, 10th, 17th, 24th

- 0030 BBC: Megamix. A compendium of music, sport, fashion, health, travel, news and views for young people.
- 0037 Radio Netherlands: Newslines. See S 0037.

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- 0130 Radio Moscow (World Service): News in Brief
- 0150 HCJB: News [T-A]
- 0151 Radio Veritas Asia: World News [M-F]
- 0151 Spanish National Radio: News Summary [S]
- 0155 HCJB: News [S]
- 0155 KUSW: News [T-S]
- 0155 Radio Veritas Asia: World News [A]
- 0155 Voice of Indonesia: News in Brief
- 0200 BBC: World News
- 0200 Christian Science Monitor: News
- 0200 Deutsche Welle: World News
- 0200 HCJB: News [M]
- 0200 Kol Israel: News
- 0200 Radio Australia: International Report
- 0200 Radio Berlin Int'l: News
- 0200 Radio Bras, Brasilia: News
- 0200 Radio Bucharest: News
- 0200 Radio Havana Cuba: Int'l News [M-A]
- 0200 Radio Kiev: News
- 0200 Radio Moscow: News
- 0200 Radio New Zealand Int'l: News [A-S]
- 0200 Radio RSA: News
- 0200 RAE, Buenos Aires: News

- 0200 Swiss Radio Int'l: News
- 0200 Voice of America: News
- 0200 Voice of Free China: News and Commentary
- 0200 WWCR: USA Radio News [T-A]
- 0215 Radio Cairo: News
- 0230 Christian Science Monitor(E.Africa):News [M]
- 0230 Christian Science Monitor: News [T-F]
- 0230 Radio Finland: Northern Report [T-A]
- 0230 Radio Havana Cuba: Newsbreak [M-A]
- 0230 Radio Moscow (World Service): News in Brief
- 0230 Radio Pakistan: News (Special English)
- 0230 Radio Portugal: News [T-A]
- 0230 Radio Tirana, Albania: News
- 0245 Radio Berlin Int'l: News
- 0255 KUSW: News [T-S]
- 0300 BBC: World News
- 0300 Belize Radio One: News
- 0300 Christian Science Monitor: News
- 0300 Deutsche Welle: World News
- 0300 HCJB: News [T-A]
- 0300 Radio Australia: World and Australian News
- 0300 Radio Beijing: News
- 0300 Radio Canada Int'l: News [M-F]
- 0300 Radio for Peace Int'l: News [T-A]
- 0300 Radio Havana Cuba: Int'l News [M-A]
- 0300 Radio Japan: News

- 0300 Radio Moscow: News
- 0300 Radio New Zealand Int'l: News [A-S]
- 0300 Radio Prague: News
- 0300 Voice of America: News
- 0300 Voice of Free China: News and Commentary
- 0300 WRNO: ABC News [F]
- 0300 WWCR: USA Radio News [T-S]
- 0309 BBC: News About Britain
- 0310 Radio Beijing: News About China
- 0315 Radio Cairo: News
- 0315 Radio France International: News
- 0315 Radio Havana Cuba: Cuban Nat'l News [M-A]
- 0330 Christian Science Monitor(E.Africa):News [M]
- 0330 Christian Science Monitor: News [T-F]
- 0330 Radio Berlin Int'l: News
- 0330 Radio Havana Cuba: News [M-A]
- 0330 Radio Moscow (World Service): News in Brief
- 0330 Radio Netherlands: News [T-S]
- 0330 Radio Tirana, Albania: News
- 0330 UAE Radio, Dubai: News
- 0350 Radio Yerevan: News
- 0350 Radiotelevisione Italiana: News
- 0355 KUSW: News [T-S]
- 0400 BBC: Newsdesk
- 0400 Christian Science Monitor: News
- 0400 Deutsche Welle: World News

BULLETIN BOARD

A BANNER EVENT: The BBC's "Multitrack" pop music programs have featured much staff turnover since their inception in 1986.



"Multitrack 2," the program of newly-released singles and pop news and interviews, has found a permanent host.

Graham Bannerman provides a decidedly cheery look at the latest rock tunes, to be heard on Wednesdays at 2330 UTC and Thursdays at 1215 UTC.

Tim Smith is no Paul Burnett, but he's quickly learning the ropes on "Multitrack 1," the top-twenty chart show on Mondays at

2330 UTC and Tuesdays at 1215 UTC. And BBC fixture Sarah Ward brings her aesthetic, unique voice to "Multitrack 3," a look at alternative music on Fridays at 2330 UTC and Saturdays at 1215 UTC.

TOOLING AROUND: The BBC will present a four-part series on tools this month, to coincide with the twentieth anniversary of the first chainsaw. The program features hammers, saws, screwdrivers, and pliers, in its month-long run. The program, "Tools of the Trade," can be heard on Sundays at 0401 UTC.

And if you bought that, you've been fooled! April Fool's Day has come early... though the BBC might eventually run a program on power tools...

- 0040 HCJB (North America): Our Daily Bread. See M 1315.
- 0045 HCJB (North America): Gateway to Joy. An evangelical program.
- 0052 Radio Netherlands: The Research File. See M 0752.
- 0100 HCJB (North America): Passport. See M 0135.
- 0101 BBC: Outlook. See M 1405.
- 0109 Deutsche Welle: Newline Cologne. See M 1109.
- 0125 BBC: Financial News. See M 2310.
- 0130 BBC: Short Story. Brief tales written by BBC listeners.
- 0134 Deutsche Welle: Arts on the Air. See S 1109.
- 0145 BBC: Europe's World. A magazine program reflecting life in Europe and its links with other parts of the world.
- 0200 HCJB: DX Party Line. See S 0200.
- 0209 BBC: British Press Review. See S 0209.
- 0209 Deutsche Welle: Morning Magazine. See M 0209.
- 0215 BBC: Network UK. A look at the issues and events that affect the lives of people throughout the UK.
- 0230 BBC: Sports International. Feature program on a topic or person making sports headlines.
- 0230 HCJB: Happiness Is. See S 0230.
- 0234 Deutsche Welle: Man and Environment. A

- program on all topics relating to the environment in industrial and developing countries.
- 0305 HCJB: Guidelines for Family Living. Help for the family from Harold Sala.
- 0309 Deutsche Welle: Newline Cologne. See M 1109.
- 0315 BBC: The World Today. See M 1645.
- 0315 HCJB: Rendezvous. Dick Saunders presents Bible study and evangelism.
- 0330 BBC: John Peel. Tracks from newly released albums and singles from the contemporary music scene.
- 0330 HCJB: Grace Worship Hour. See S 1300.
- 0334 Deutsche Welle: Arts on the Air. See S 1109.
- 0337 Radio Netherlands: Newline. See S 0037.
- 0352 Radio Netherlands: The Research File. See M 0752.
- 0405 HCJB: Music in the Night. See S 1100.
- 0409 Deutsche Welle: Morning Magazine. See M 0209.
- 0430 BBC: Off the Shelf. See M 0430.
- 0434 Deutsche Welle: Africa Report. See M 0434.
- 0437 Radio Netherlands: Newline. See S 0037.
- 0445 BBC: New Ideas. A radio shop window for new products and inventions.
- 0455 BBC: Book Choice. See S 0745.
- 0505 HCJB: Passport. See M 0505.

- 0400 HCJB: News [M-A]
- 0400 Radio Australia: International Report
- 0400 Radio Beijing: News
- 0400 Radio Berlin Int'l: News
- 0400 Radio Bucharest: News
- 0400 Radio Canada Int'l: News [M-F]
- 0400 Radio Havana Cuba: Int'l News [M-A]
- 0400 Radio Moscow: News
- 0400 Radio New Zealand Int'l: News
- 0400 Radio RSA: News
- 0400 Radio Tanzania: News
- 0400 RAE, Buenos Aires: News
- 0400 Swiss Radio Int'l: News
- 0400 Voice of America: News
- 0400 Voice of Turkey: News
- 0400 WWCR: USA Radio News [M-A]
- 0405 Radio Pyongyang: News
- 0410 Radio Beijing: News About China
- 0425 Radiotelevisione Italiana: News
- 0430 Christian Science Monitor(E.Africa): News [M]
- 0430 Christian Science Monitor: News [T-F]
- 0430 Radio Havana Cuba: Newsbreak [M-A]
- 0430 Radio Moscow (World Service): News in Brief
- 0430 Radio Netherlands: News [M-A]
- 0430 Radio Tirana, Albania: News
- 0445 Radio Berlin Int'l: News

- 0455 KUSW: News [S, T-F]
- 0455 Radio Tanzania: News
- 0500 BBC: World News
- 0500 Christian Science Monitor: News
- 0500 Deutsche Welle: World News
- 0500 HCJB: News [S-M]; Latin American [T-A]
- 0500 Kol Israel: News
- 0500 Radio Australia: World and Australian News
- 0500 Radio Havana Cuba: Int'l News [M-A]
- 0500 Radio Japan: News
- 0500 Radio Moscow: News
- 0500 Radio New Zealand Int'l: News
- 0500 Spanish National Radio: News
- 0500 Voice of America: News
- 0500 WWCR: USA Radio News [T-A]
- 0515 Radio Havana Cuba: Cuban Nat'l News [M-A]
- 0530 Christian Science Monitor(E.Africa): News [M]
- 0530 Christian Science Monitor: News [T-F]
- 0530 Radio Bucharest: News
- 0530 Radio Havana Cuba: News [M-A]
- 0530 Radio Moscow (World Service): News in Brief
- 0530 UAE Radio, Dubai: News
- 0550 HCJB: News [T-A]
- 0551 Spanish National Radio: News Summary [S]
- 0555 HCJB: News [S]
- 0555 KUSW: News [S, T-F]

- 0509 BBC: Twenty-Four Hours. See S 0509.
- 0509 Deutsche Welle: Newline Cologne. See M 1109.
- 0530 BBC: Financial News. See M 2310.
- 0534 Deutsche Welle: Arts on the Air. See S 1109.
- 0540 BBC: Words of Faith. See S 0540.
- 0545 BBC: The World Today. See M 1645.
- 0600 HCJB: DX Party Line. See S 0200.
- 0609 Deutsche Welle: Morning Magazine. See M 0209.
- 0630 BBC: Musical Feature. A program on a musical topic.
- 0630 HCJB: Music in the Night. See S 1100.
- 0634 Deutsche Welle: Africa Report. See M 0434.
- 0709 BBC: Twenty-Four Hours. See S 0509.
- 0730 BBC: Europe's World. See T 0145.
- 0737 Radio Netherlands: Newline. See S 0037.
- 0745 BBC: Network UK. See T 0215.
- 0752 Radio Netherlands: Images. A cultural magazine, highlighting film, theatre, opera, books, and serious music.
- 1100 HCJB: Music in the Night. See S 1100.
- 1109 Deutsche Welle: Newline Cologne. See M 1109.
- 1115 BBC: Waveguide. See S 0750.
- 1125 BBC: Book Choice. See S 0745.
- 1130 BBC: Megamix. See T 0030.
- 1130 HCJB: Insight for Living. See M 1130.
- 1137 Radio Netherlands: Newline. See S 0037.
- 115* Radio Netherlands: Images. See T 0752.
- 1200 HCJB: Sound Words. See M 1200.
- 1215 BBC: Multitrack 1: Top 20. See M 2330.
- 1230 HCJB: Happiness Is. See S 0230.
- 1245 BBC: Sports Roundup. See S 1330.
- 1300 HCJB: Stories of Great Christians. See M 1300.
- 1309 BBC: Twenty-Four Hours. See S 0509.
- 1315 HCJB: Our Daily Bread. See M 1315.
- 1330 BBC: Network UK. See T 0215.
- 1330 HCJB: Guidelines for Living. See M 1330.
- 1345 BBC: Feature. See S 0430.
- 1400 HCJB: Insight. See M 1400.
- 1405 BBC: Outlook. See M 1405.
- 1406 Radio Peace and Progress: Commentary and Reports. See S 1406.
- 1425 Radio Peace and Progress: Music. See S 1425.
- 1430 BBC: Off the Shelf. See M 0430.
- 1430 HCJB: Through the Bible. See S 1430.
- 1437 Radio Netherlands: Newline. See S 0037.
- 1445 BBC: Musical Feature (except April 3rd: Composer Cameos). See M 0145.
- 1452 Radio Netherlands: Images. See T 0752.
- 1500 HCJB: Joni and Friends. See M 1500.
- 1505 HCJB: Shalom. See M 1505.
- 1509 Deutsche Welle: Newline Cologne. See M 1109.
- 1515 BBC: A Jolly Good Show. Dave Lee Travis presents listener record requests and dedications, and the UK's top ten albums.
- 1520 HCJB: Psychiatry and You. See M 1520.

- 0600 BBC: Newsdesk
- 0600 Christian Science Monitor: News
- 0600 Deutsche Welle: World News
- 0600 HCJB: News [M]
- 0600 Radio Australia: International Report
- 0600 Radio Berlin Int'l: News
- 0600 Radio Havana Cuba: Int'l News [M-A]
- 0600 Radio Korea: News
- 0600 Radio Moscow: News
- 0600 Radio New Zealand Int'l: News
- 0600 Voice of America: News
- 0605 Radio Pyongyang: News
- 0615 Radio Berlin Int'l: News
- 0615 Radio Canada Int'l: News [M-F]
- 0630 Christian Science Monitor: News [M-F]
- 0630 Radio Finland: Northern Report [T-A]
- 0630 Radio Havana Cuba: Newsbreak [M-A]
- 0630 Radio Moscow (World Service): News in Brief
- 0630 Radio Polonia: News
- 0630 Radio Tirana, Albania: News
- 0630 Swiss Radio Int'l: News
- 0645 Radio Bucharest: News
- 0645 Radio Canada Int'l: News [M-F]
- 0655 HCJB: News [M-A]
- 0655 KUSW: News [S]
- 0700 BBC: World News

program guide

- 1530 HCJB: Back to the Bible. See M 1530.
 1534 Deutsche Welle: Insight. An in-depth feature, giving the background to political events and international developments.
 1609 Deutsche Welle: Newline Cologne. See M 1109.
 1615 BBC: Omnibus. A half-hour program on practically any topic.
 1634 Deutsche Welle: Asia-Pacific Report. See M 1634.
 1636 Radio Peace and Progress: Commentary and Reports. See S 1406.
 1637 Radio Netherlands: Newline. See S 0037.
 1645 BBC: The World Today. See M 1645.
 1652 Radio Netherlands: Images. See T 0752.
 1655 Radio Peace and Progress: Music. See S 1425.
 2305 BBC: Commentary. See M 2305.
 2310 BBC: Financial News. See M 2310.
 2315 BBC: Concert Hall. See S 1515.



George Thomsen presents the news on Deutsche Welle.

Wednesday

April 4th, 11th, 18th, 25th

- 0030 BBC: Omnibus. See T 1615.
 0037 Radio Netherlands: Newline. See S 0037.
 0040 HCJB (North America): Our Daily Bread. See M 1315.
 0045 HCJB (North America): Gateway to Joy. See T 0045.
 0052 Radio Netherlands: Images. See T 0752.
 0100 HCJB (North America): Passport. See M 0135.
 0101 BBC: Outlook. See M 1405.
 0109 Deutsche Welle: Newline Cologne. See M 1109.
 0125 BBC: Financial News. See M 2310.
 0130 BBC: Feature. Programming on various subjects.
 0134 Deutsche Welle: Science and Technology. See M 0234.
 0145 BBC: Country Style. David Allan presents British country music.
 0200 HCJB: Saludos Amigos. Ken MacHarg presents an "international friendship" program.
 0209 BBC: British Press Review. See S 0209.
 0209 Deutsche Welle: Morning Magazine. See M 0209.
 0215 BBC: Health Matters. See M 1115.
 0230 BBC: Musical Feature. A program on a musical topic.
 0230 HCJB: Happiness Is. See S 0230.
 0234 Deutsche Welle: Insight. See T 1534.
 0305 HCJB: Guidelines for Family Living. See T 0305.

- 0309 Deutsche Welle: Newline Cologne. See M 1109.
 0315 BBC: The World Today. See M 1645.
 0315 HCJB: Rendezvous. See T 0315.
 0330 BBC: Discovery. An in-depth look at scientific research.
 0330 HCJB: Psychology for Living. Christian advice on issues of today.
 0334 Deutsche Welle: Science and Technology. See M 0234.
 0337 Radio Netherlands: Newline. See S 0037.
 0345 HCJB: Wonderful Words of Life. Messages from the Salvation Army.
 0352 Radio Netherlands: Images. See T 0752.
 0405 HCJB: Music in the Night. See S 1100.
 0409 Deutsche Welle: Morning Magazine. See M 0209.
 0430 BBC: Off the Shelf. See M 0430.
 0434 Deutsche Welle: Africa Report. See M 0434.
 0437 Radio Netherlands: Newline. See S 0037.
 0445 BBC: Country Style. See W 0145.
 0500 HCJB: Passport. See M 0135.
 0509 BBC: Twenty-Four Hours. See S 0509.
 0509 Deutsche Welle: Newline Cologne. See M 1109.
 0530 BBC: Financial News. See M 2310.
 0534 Deutsche Welle: Science and Technology. See M 0234.
 0540 BBC: Words of Faith. See S 0540.
 0545 BBC: The World Today. See M 1645.
 0600 HCJB: Saludos Amigos. See W 0200.
 0609 Deutsche Welle: Morning Magazine. See M

0209.
 0630 BBC: Meridian. The world of the arts, including music, drama, and books.
 0630 HCJB: Music in the Night. See S 1100.
 0634 Deutsche Welle: Africa Report. See M 0434.
 0709 BBC: Twenty-Four Hours. See S 0509.
 0730 BBC: Development '90. Aid and development issues.
 0737 Radio Netherlands: Newline. See S 0037.
 0752 Radio Netherlands: Mind Your Own Business. Commerce, business, and finance - especially in Holland.
 1100 HCJB: Music in the Night. See S 1100.
 1109 Deutsche Welle: Newline Cologne. See M 1109.
 1115 BBC: Country Style. See W 0145.
 1130 BBC: Meridian. See W 0630.
 1130 HCJB: Insight for Living. See M 1130.
 1152 Radio Netherlands: Mind Your Own Business. See W 0752.
 1200 HCJB: Sound Words. See M 1200.
 1206 Radio Netherlands: Serious Music. Harry Kliphuis presents new Dutch compact disc recordings.
 1215 BBC: Talk. A short sermonette on various subjects.
 1225 BBC: The Farming World. Issues in agriculture.
 1230 HCJB: Happiness Is. See S 0230.
 1245 BBC: Sports Roundup. See S 1330.
 1300 HCJB: Stories of Great Christians. See M 1300.
 1309 BBC: Twenty-Four Hours. See S 0509.
 1315 HCJB: Our Daily Bread. See M 1315.
 1330 BBC: Development '90. See W 0730.
 1330 HCJB: Morning in the Mountains. See M 1330.
 1405 BBC: Outlook. See M 1405.
 1406 Radio Peace and Progress: Commentary and Reports. See S 1406.
 1425 Radio Peace and Progress: Music. See S 1425.
 1430 BBC: Off the Shelf. See M 0430.
 1430 HCJB: Through the Bible. See M 1430.
 1437 Radio Netherlands: Newline. See S 0037.
 1445 BBC: Business Matters. See W 0430.
 1452 Radio Netherlands: Mind Your Own Business. See W 0752.
 1500 HCJB: Joni and Friends. See M 1500.
 1505 HCJB: Shalom. See M 1505.
 1506 Radio Netherlands: Serious Music. See W 1206.
 1509 Deutsche Welle: Newline Cologne. See M 1109.
 1515 BBC: Feature. See M 2315.
 1520 HCJB: Psychiatry and You. See M 1520.

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- 0700 BRT, Brussels: News [M-F]
 0700 Christian Science Monitor: News
 0700 Radio Australia: World and Australian News
 0700 Radio Havana Cuba: Int'l News [M-A]
 0700 Radio Japan: News
 0700 Radio Moscow: News
 0700 Radio New Zealand Int'l: News [A-S]
 0700 Radio Tirana, Albania: News
 0700 Voice of Free China: News and Commentary
 0715 Radio Havana Cuba: Cuban Nat'l News [M-A]
 0730 Christian Science Monitor: News [M-F]
 0730 Radio Havana Cuba: News [M-A]
 0730 Radio Moscow (World Service): News in Brief
 0730 Radio Netherlands: News [M-A]
 0755 KUSW: News [S]
 0800 BBC: World News
 0800 Christian Science Monitor: News
 0800 Radio Australia: International Report
 0800 Radio Finland: Northern Report [T-S]
 0800 Radio Korea: News
 0800 Radio Moscow (World Service): News
 0800 Voice of Indonesia: News
 0805 Radio Pyongyang: News
 0830 Christian Science Monitor: News [M-F]

- 0830 Radio Finland: Northern Report [T-S]
 0830 Radio Moscow (World Service): News in Brief
 0830 Radio Netherlands: News [M-A]
 0830 Swiss Radio Int'l: News
 0845 Radio Berlin Int'l: News
 0855 KUSW: News [S]
 0855 Voice of Indonesia: News in Brief
 0900 BBC: World News
 0900 BRT, Brussels: News [M-F]
 0900 Christian Science Monitor: News
 0900 Deutsche Welle: World News
 0900 Radio Australia: World and Australian News
 0900 Radio Japan: News
 0900 Radio Moscow (World Service): News
 0900 Radio New Zealand Int'l: News
 0930 Christian Science Monitor: News [M-F]
 0930 Deutsche Welle: African News [M-F]
 0930 Radio Moscow (World Service): News in Brief
 0955 KUSW: News [S]
 1000 BBC: News Summary
 1000 Christian Science Monitor: News
 1000 Radio Australia: International Report
 1000 Radio Berlin Int'l: News
 1000 Radio Moscow (World Service): News
 1000 Radio New Zealand Int'l: News
 1000 Radio Tanzania: News

- 1000 Swiss Radio Int'l: News
 1000 Voice of America: News
 1030 Radio Moscow (World Service): News in Brief
 1030 Radio Netherlands: News [M-A]
 1030 UAE Radio, Dubai: News
 1045 Radio Berlin Int'l: News
 1055 KUSW: News [S]
 1100 BBC: World News
 1100 Christian Science Monitor: News [M-F]
 1100 Deutsche Welle: World News
 1100 Kol Israel: News
 1100 Radio Australia: World and Australian News
 1100 Radio Beijing: News
 1100 Radio Finland: Northern Report [T-F]
 1100 Radio Japan: News
 1100 Radio Korea: News
 1100 Radio Moscow (World Service): News
 1100 Radio New Zealand Int'l: News
 1100 Radio RSA: News
 1100 Swiss Radio Int'l: News
 1100 Trans World Radio, Bonaire: News [M-F]
 1100 Voice of America: News
 1105 Radio Pakistan: News (Special English)
 1105 Radio Pyongyang: News
 1109 BBC: News About Britain
 1110 Belize Radio One: News Summary [T-F]

program guide

- 1530 BBC: Comedy Show. Comedic programming on various subjects.
- 1530 HCJB: Back to the Bible. See M 1530.
- 1534 Deutsche Welle: Living in Germany. The social scene in Germany.
- 1600 HCJB: Focus on the Family. See M 1600.
- 1609 Deutsche Welle: Newline Cologne. See M 1109.
- 1615 BBC: Musical Feature. See T 0630.
- 1634 Deutsche Welle: Asia-Pacific Report. See M 1634.
- 1636 Radio Peace and Progress: Commentary and Reports. See S 1406.
- 1637 Radio Netherlands: Newline. See S 0037.
- 1645 BBC: The World Today. See M 1645.
- 1652 Radio Netherlands: Mind Your Own Business. See W 0752.
- 1655 Radio Peace & Progress: Music. See S 1425.
- 2305 BBC: Commentary. See M 2305.
- 2310 BBC: Financial News. See M 2310.
- 2315 BBC: Good Books. See M 0315.
- 2330 BBC: Multitrack 2. Graham Bannerman presents new pop music records, interviews, news, and competitions.

Thursday

April 5th, 12th, 19th, 26th

- 0030 BBC: Comedy Show. See W 1530.
- 0037 Radio Netherlands: Newline. See S 0037.
- 0040 HCJB (North America): Our Daily Bread. See M 1315.
- 0045 HCJB (North America): Gateway to Joy. See T 0045.
- 0052 Radio Netherlands: Mind Your Own Business. See W 0752.
- 0100 HCJB (North America): Passport. See M 0135.
- 0101 BBC: Outlook. See M 1405.
- 0106 Radio Netherlands: Serious Music. See W 1206.
- 0109 Deutsche Welle: Newline Cologne. See M 1109.
- 0125 BBC: Financial News. See M 2310.
- 0130 BBC: Waveguide. See S 0750.
- 0134 Deutsche Welle: Living in Germany. See W 1534.
- 0140 BBC: Book Choice. See S 0745.
- 0145 BBC: Society Today. A weekly look at the

- changes in Britain.
- 0200 HCJB: Ham Radio Today. John Beck presents a program about amateur radio.
- 0209 BBC: British Press Review. See S 0209.
- 0209 Deutsche Welle: Morning Magazine. See M 0209.
- 0215 BBC: Network UK. See T 0215.
- 0230 BBC: Assignment. Examinations of current topical issues.
- 0230 HCJB: Happiness Is. See S 0230.
- 0234 Deutsche Welle: Living in Germany. See W 1534.
- 0305 HCJB: Guidelines for Family Living. See T 0305.
- 0309 Deutsche Welle: Newline Cologne. See M 1109.
- 0315 BBC: The World Today. See M 1645.
- 0315 HCJB: Rendezvous. See T 0315.
- 0330 BBC: Quiz. See M 1215.
- 0330 HCJB: Heaven and Home Hour. Christian messages of inspiration.
- 0334 Deutsche Welle: Living in Germany. See W 1534.
- 0337 Radio Netherlands: Newline. See S 0037.
- 0352 Radio Netherlands: Mind Your Own Business. See W 0752.
- 0405 HCJB: Music in the Night. See S 1100.
- 0406 Radio Netherlands: Serious Music. See W 1206.
- 0409 Deutsche Welle: Morning Magazine. See M 0209.
- 0430 BBC: Off the Shelf. See M 0430.
- 0434 Deutsche Welle: Africa Report. See M 0434.
- 0437 Radio Netherlands: Newline. See S 0037.
- 0445 BBC: Andy Kershaw's World of Music. See M 0215.
- 0500 HCJB: Passport. See M 0135.
- 0509 BBC: Twenty-Four Hours. See S 0509.
- 0509 Deutsche Welle: Newline Cologne. See M 1109.
- 0530 BBC: Financial News. See M 2310.
- 0534 Deutsche Welle: Living in Germany. See W 1534.
- 0540 BBC: Words of Faith. See S 0540.
- 0545 BBC: The World Today. See M 1645.
- 0600 HCJB: Ham Radio Today. See H 0200.
- 0609 Deutsche Welle: Morning Mag. See M 0209.
- 0630 BBC: Talk. See W 1215.
- 0630 HCJB: Music in the Night. See S 1100.
- 0634 Deutsche Welle: Africa Report. See M 0434.
- 0640 BBC: The Farming World. See W 1225.
- 0709 BBC: Twenty-Four Hours. See S 0509.
- 0730 BBC: Write On... The irrepressible Paddy Feeny reads listener letters, mainly on the topic of all those allowing Scottish announcers on the BBC!



HCJB's correspondence staff, l to r: Anabella Cabezas, Linda Fluker, Denise Zambrano, Marian Houghton, Edna Beachy, Karen Pedersen

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|--|--|---|
| 1110 Radio Beijing: News About China | 1230 Christian Science Monitor: News | 1330 Radio Tashkent: News |
| 1120 Belize Radio One: News Summary [A] | 1230 Radio Berlin Int'l: News | 1330 Swiss Radio Int'l: News |
| 1125 Belize Radio One: News Summary [M] | 1230 Radio France Int'l: News | 1330 UAE Radio, Dubai: News |
| 1130 Christian Science Monitor: News | 1230 Radio Moscow (World Service): News in Brief | 1330 Voice of America: News (Special English) |
| 1130 Deutsche Welle: African News [M] | 1230 Radio Polonia: News | 1330 Voice of Turkey: News |
| 1130 Radio Moscow (World Service): News in Brief | 1230 Trans World Radio, Bonaire: News [M-A] | 1345 Radio Berlin Int'l: News |
| 1130 Radio Netherlands: News [M-A] | 1300 BBC: World News | 1352 Radio RSA: News in Brief |
| 1152 Radio RSA: News in Brief | 1300 Belize Radio One: News | 1400 BBC: Summary [A-S]; Five-Minute News [M-F] |
| 1155 KUSW: News [S] | 1300 Christian Science Monitor: News | 1400 Christian Science Monitor: News |
| 1200 BBC: News Summary [S]; Newsreel [M-A] | 1300 Christian Science Monitor: News [M-F] | 1400 Radio Australia: International Report |
| 1200 Christian Science Monitor: News [M-F] | 1300 Radio Australia: World and Australian News | 1400 Radio Beijing: News |
| 1200 Radio Australia: International Report | 1300 Radio Bucharest: News | 1400 Radio Berlin Int'l: News |
| 1200 Radio Beijing: News | 1300 Radio Canada Int'l: World Report [M-F] | 1400 Radio Canada Int'l: News [S] |
| 1200 Radio Berlin Int'l: News | 1300 Radio Finland: Northern Report [T-A] | 1400 Radio France International: News |
| 1200 Radio Bucharest: News | 1300 Radio Moscow (World Service): News | 1400 Radio Japan: News |
| 1200 Radio Canada Int'l: News | 1300 Radio RSA: News | 1400 Radio Korea: News |
| 1200 Radio Finland: Northern Report [T-F] | 1300 Radio Tanzania: News [A-S] | 1400 Radio Moscow (World Service): News |
| 1200 Radio Moscow (World Service): News | 1300 Radio Tirana, Albania: News | 1400 Radio Peace and Progress: News |
| 1200 Radio New Zealand Int'l: News | 1300 Trans World Radio, Bonaire: News [S] | 1400 Radio RSA: News |
| 1200 Radio Polonia: News | 1300 Voice of America: News | 1400 Voice of America: News |
| 1200 Radio Tashkent: News | 1300 WOCR: USA Radio News [M-F] | 1400 WOCR: USA Radio News [M-F] |
| 1200 Radio Yugoslavia: News | 1305 Radio Pyongyang: News | 1405 Radio Finland: Northern Report [T-A] |
| 1200 Swiss Radio Int'l: News | 1315 Radio Berlin Int'l: News | 1405 Radio Pyongyang: News |
| 1200 Voice of America: News | 1325 HCJB: News [M-F] | 1410 Radio Beijing: News About China |
| 1210 Radio Beijing: News About China | 1330 Christian Science Monitor: News [M-F] | 1425 HCJB: News [M-F] |
| 1230 BRT, Brussels: News [M-S] | 1330 Radio Moscow (World Service): News in Brief | 1430 Christian Science Monitor: News [M-F] |

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- 0737 Radio Netherlands: Newslines. See S 0037.
 0745 BBC: Network UK. See T 0215.
 0752 Radio Netherlands: Media Network. A weekly survey of communications developments around the globe.
 1100 HCJB: Music in the Night. See S 1100.
 1109 Deutsche Welle: Newslines Cologne. See M 1109.
 1115 BBC: New Ideas. See T 0445.
 1125 BBC: Book Choice. See S 0745.
 1130 BBC: Serial. A reading from a book of interest.
 1130 HCJB: Insight for Living. See M 1130.
 1137 Radio Netherlands: Newslines. See S 0037.
 1152 Radio Netherlands: Media Network. See H 0752.
 1200 HCJB: Sound Words. See M 1200.
 1215 BBC: Multitrack 2. See W 1830.
 1230 HCJB: Happiness Is. See S 0230.
 1245 BBC: Sports Roundup. See S 1330.
 1300 HCJB: Stories of Great Christians. See M 1300.
 1309 BBC: Twenty-Four Hours. See S 0509.
 1315 HCJB: Our Daily Bread. See M 1315.
 1330 BBC: Network UK. See T 0215.
 1330 HCJB: Morning in the Mountains. See M 1330.
 1345 BBC: Folk in Britain or Jazz Scene UK. A look at folk or jazz music on the British Isles.
 1405 BBC: Outlook. See M 1405.
 1406 Radio Peace and Progress: Commentary and Reports. See S 1406.
 1425 Radio Peace and Progress: Music. See S 1425.
 1430 BBC: Off the Shelf. See M 0430.
 1430 HCJB: Through the Bible. See M 1430.
 1437 Radio Netherlands: Newslines. See S 0037.
 1445 BBC: Write On... See H 0730.
 1452 Radio Netherlands: Media Network. See H 0752.
 1500 HCJB: Joni and Friends. See M 1500.
 1505 HCJB: Shalom. See M 1505.
 1509 Deutsche Welle: Newslines Cologne. See M 1109.
 1515 BBC: The Pleasure's Yours. Gordon Clyde presents classical music requests.
 1520 HCJB: Psychiatry and You. See M 1520.
 1530 HCJB: Back to the Bible. See M 1530.
 1534 Deutsche Welle: Spotlight on Sport. Background stories and coverage of important sporting events.
 1600 HCJB: Focus on the Family. See M 1600.
 1609 Deutsche Welle: Newslines Cologne. See M 1109.
 1615 BBC: Assignment. See H 0230.
 1634 Deutsche Welle: Asia-Pacific Report. See M

1634.
 1636 Radio Peace and Progress: Commentary and Reports. See S 1406.
 1637 Radio Netherlands: Newslines. See S 0037.
 1645 BBC: The World Today. See M 1645.
 1652 Radio Netherlands: Media Network. See H 0752.
 1655 Radio Peace and Progress: Music. See S 1425.
 2305 BBC: Commentary. See M 2305.
 2310 BBC: Financial News. See M 2310.
 2315 BBC: Music Review. Classical music events and developments from around the world.

- 0125 BBC: Financial News. See M 2310.
 0130 BBC: Folk in Britain or Jazz Scene UK. See H 1345.
 0134 Deutsche Welle: Economic Notebook. A look at the economic scene in Germany and around the world.
 0145 BBC: Feature. Programming on various topical subjects.
 0200 HCJB: Musical Mailbag. Listener letters with music requests.
 0209 BBC: British Press Review. See S 0209.
 0209 Deutsche Welle: Morning Magazine. See M 0209.



Roy Forbes (right) conducts an interview at a tourist fair for the English Service of Deutsche Welle.

Friday

April 6th, 13th, 20th, 27th

- 0030 BBC: Musical Feature. Programming on various musical subjects.
 0037 Radio Netherlands: Newslines. See S 0037.
 0040 HCJB (North America): Our Daily Bread. See M 1315.
 0045 HCJB (North America): Gateway to Joy. See T 0045.
 0052 Radio Netherlands: Media Network. See H 0752.
 0100 HCJB (North America): Passport. See M 0135.
 0101 BBC: Outlook. See M 1405.
 0109 Deutsche Welle: Newslines Cologne. See M 1109.

- 0215 BBC: Seven Seas. A weekly program about ships and the sea.
 0230 BBC: Serial. See H 1130.
 0230 HCJB: Happiness Is. See S 0230.
 0234 Deutsche Welle: Spotlight on Sport. See W 1534.
 0305 HCJB: Guidelines for Family Living. See T 0305.
 0309 Deutsche Welle: Newslines Cologne. See M 1109.
 0315 BBC: The World Today. See M 1645.
 0315 HCJB: Rendezvous. See T 0315.
 0330 BBC: Focus on Faith. Comment and discussion on the major issues in the worlds of faith.
 0330 HCJB: Christian Brotherhood Hour. Christian messages of inspiration.
 0334 Deutsche Welle: Economic Notebook. See F 0134.

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- 1430 Radio Moscow (World Service): News in Brief
 1430 Radio Netherlands: News [M-A]
 1430 Radio Polonia: News
 1430 Radio Prague: News
 1445 Radio Berlin Int'l: News
 1500 BBC: Newsreel
 1500 Belize Radio One: News [M-A]
 1500 Christian Science Monitor: News
 1500 Deutsche Welle: World News
 1500 Radio Australia: World and Australian News
 1500 Radio Beijing: News
 1500 Radio Bucharest: News
 1500 Radio Japan: News
 1500 Radio Moscow (World Service): News
 1500 Radio RSA: News
 1500 Voice of America: News
 1500 WHRI: News [M-A]
 1500 WWCR: USA Radio News
 1505 Radio Pyongyang: News
 1510 Radio Beijing: News About China
 1525 HCJB: News [M-F]
 1526 Radio Veritas Asia: World News [M-A]
 1530 BRT, Brussels: News [M-S]
 1530 Christian Science Monitor: News [M-F]

- 1530 Deutsche Welle: African News [M-F]
 1530 Radio Moscow (World Service): News in Brief
 1530 Radio Prague: News
 1530 Radio Tirana, Albania: News
 1530 Swiss Radio Int'l: News
 1545 Radio Berlin Int'l: News
 1545 Radio Canada Int'l: News
 1552 Radio RSA: News in Brief
 1600 BBC: World News
 1600 Christian Science Monitor: News
 1600 Deutsche Welle: World News
 1600 Radio Australia: International Report
 1600 Radio France International: News
 1600 Radio Korea: News
 1600 Radio Moscow (World Service): News
 1600 Radio Polonia: News
 1600 Radio Portugal: News [M-F]
 1600 Radio Tanzania: News
 1600 Voice of America: News
 1600 WWCR: USA Radio News [M-F]
 1609 BBC: News About Britain
 1625 HCJB: News [M-F]
 1630 Christian Science Monitor: News [M-F]
 1630 Radio Moscow (World Service): News in Brief
 1630 Radio Netherlands: News [M-A]
 1630 Radio Peace and Progress: News

- 1630 Radio Polonia: News
 1630 UAE Radio, Dubai: News
 1630 Voice of America(exc Africa):News(Spec Eng)
 1645 Radio Berlin Int'l: News
 1655 KUSW: News [M-F]
 1700 BBC: World News [S-F]; News Summary [A]
 1700 Belize Radio One: News [M-F]
 1700 Christian Science Monitor: News
 1700 Radio Australia: World and Australian News
 1700 Radio Japan: News
 1700 Radio Moscow (World Service): News
 1700 Voice of America: News
 1705 Radio Pyongyang: News
 1715 Radio Canada Int'l: News
 1730 BRT, Brussels: News
 1730 Christian Science Monitor: News [M-F]
 1730 Radio Bucharest: News
 1730 Radio Moscow (World Service): News in Brief
 1730 Radio Prague: News
 1730 RAE, Buenos Aires: News
 1730 Swiss Radio Int'l: News
 1755 KUSW: News [M-A]
 1800 BBC: Newsdesk
 1800 Belize Radio One: Headline News [M-A]
 1800 Christian Science Monitor: News
 1800 Kol Israel: News

program

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Brent Allred, Director, English Service; producer/host for "DX Partyline" on HCJB.

- 0337 Radio Netherlands: Newslines. See S 0037.
- 0352 Radio Netherlands: Media Network. See H 0752.
- 0405 HCJB: Music in the Night. See S 1100.
- 0409 Deutsche Welle: Morning Magazine. See M 0209.
- 0430 BBC: Off the Shelf. See M 0430.
- 0434 Deutsche Welle: Africa Report. See M 0434.
- 0437 Radio Netherlands: Newslines. See S 0037.
- 0445 BBC: Folk in Britain or Jazz Scene UK. See H 1345.
- 0500 HCJB: Passport. See M 0135.
- 0509 BBC: Twenty-Four Hours. See S 0509.
- 0509 Deutsche Welle: Newslines Cologne. See M 1109.
- 0530 BBC: Financial News. See T 0125.
- 0534 Deutsche Welle: Economic Notebook. See F 0134.
- 0540 BBC: Words of Faith. See S 0540.
- 0545 BBC: The World Today. See M 1645.
- 0600 HCJB: Musical Mailbag. See F 0200.
- 0609 Deutsche Welle: Morning Magazine. See M 0209.
- 0630 BBC: Meridian. See W 0630.
- 0630 HCJB: Music in the Night. See S 1100.
- 0634 Deutsche Welle: Africa Report. See M 0434.
- 0709 BBC: Twenty-Four Hours. See S 0509.
- 0730 BBC: Feature. Programming on various subjects, particularly of historical importance.
- 0737 Radio Netherlands: Newslines. See S 0037.
- 0752 Radio Netherlands: Rembrandt Express. A magazine program with a "fresh dimension".
- 1100 HCJB: Music in the Night. See S 1100.
- 1109 Deutsche Welle: Newslines Cologne. See M

- 1109.
- 1115 BBC: Feature. See F 0145.
- 1130 BBC: Meridian. See W 0630.
- 1130 HCJB: Insight for Living. See M 1130.
- 1137 Radio Netherlands: Asiascan. A live magazine show with interviews with newsmakers, press reviews, monthly quizzes and listener opinion.
- 1200 HCJB: Sound Words. See M 1200.
- 1215 BBC: Feature. See F 0730.
- 1230 HCJB: Happiness Is. See S 0230.
- 1245 BBC: Sports Roundup. See S 1330.
- 1300 HCJB: Stories of Great Christians. See M 1300.
- 1309 BBC: Twenty-Four Hours. See S 0509.
- 1315 HCJB: Our Daily Bread. See M 1315.
- 1330 BBC: John Peel. See T 0330.
- 1330 HCJB: Morning in the Mountains. See M 1330.
- 1405 BBC: Outlook. See M 1405.
- 1406 Radio Peace and Progress: Commentary and Reports. See S 1406.
- 1425 Radio Peace and Progress: Music. See S 1425.
- 1430 BBC: Off the Shelf. See M 0430.
- 1430 HCJB: Through the Bible. See M 1430.
- 1437 Radio Netherlands: Asiascan. See F 1137.
- 1445 BBC: Talks. See M 0445.
- 1500 HCJB: Joni and Friends. See M 1500.
- 1505 HCJB: Shalom. See M 1505.
- 1509 Deutsche Welle: Newslines Cologne. See M 1109.
- 1515 BBC: Music Review. See H 2315.
- 1520 HCJB: Psychiatry and You. See M 1520.
- 1530 HCJB: Back to the Bible. See M 1530.
- 1534 Deutsche Welle: Economic Notebook. See F 0134.
- 1600 HCJB: Focus on the Family. See M 1600.
- 1609 Deutsche Welle: Newslines Cologne. See M 1109.
- 1615 BBC: Science in Action. See M 0230.
- 1634 Deutsche Welle: Asia-Pacific Report. See M 1634.
- 1636 Radio Peace and Progress: Commentary and Reports. See S 1406.
- 1637 Radio Netherlands: Newslines. See S 0037.
- 1645 BBC: The World Today. See M 1645.
- 1652 Radio Netherlands: Airtime Africa. Music, discussion with studio guests, and analysis of the issues that concern both Europe and Africa.
- 1655 Radio Peace and Progress: Music. See S 1425.
- 2305 BBC: Commentary. See M 2305.
- 2310 BBC: Financial News. See M 2310.
- 2315 BBC: Worldbrief. A roundup of the week's

news headlines and human-interest happenings.

- 2330 BBC: Multitrack 3. Sarah Ward surveys the British contemporary music scene.

Saturday

April 7th, 14th, 21st, 28th

- 0030 BBC: From the Weeklies. A review of the weekly British press.
- 0037 Radio Netherlands: Newslines. See S 0037.
- 0040 HCJB (North America): Our Daily Bread. See M 1315.
- 0045 BBC: Recording of the Week. See M 0545.
- 0045 HCJB (North America): Gateway to Joy. See T 0045.
- 0052 Radio Netherlands: Rembrandt Express. See F 0752.
- 0100 HCJB (North America): Passport. See M 0135.
- 0101 BBC: Outlook. See M 1405.
- 0109 Deutsche Welle: Newslines Cologne. See M 1109.
- 0125 BBC: Financial News. See M 2310.
- 0130 BBC: Feature. Programming on various subjects.
- 0134 Deutsche Welle: Random Selection. Larry Wayne takes a look at Germany from the lighter side.
- 0145 BBC: Book Choice. See S 0745.
- 0150 BBC: New Ideas. See T 0445.
- 0200 HCJB: Sounds of Joy. Contemporary Christian music.
- 0209 BBC: British Press Review. See S 0209.
- 0209 Deutsche Welle: Commentary. See S 0109.
- 0215 BBC: Network UK. See T 0215.
- 0223 Deutsche Welle: Panorama. A review of the major news events of the week.
- 0230 BBC: People and Politics. Background to the British political scene.
- 0230 HCJB: Happiness Is. See S 0230.
- 0234 Deutsche Welle: Economic Notebook. See F 0134.
- 0305 HCJB: Guidelines for Family Living. See T 0305.
- 0309 Deutsche Welle: Newslines Cologne. See M 1109.
- 0315 BBC: The World Today. See M 1645.
- 0315 HCJB: Rendezvous. See T 0315.
- 0330 BBC: The Vintage Chart Show. Paul Burnett presents top ten hits from the music charts of yesteryear.
- 0330 HCJB: Unshackled. See S 1600.

- 1800 Radio Australia: International Report
- 1800 Radio Brasilia: News
- 1800 Radio Canada Int'l: News
- 1800 Radio Kiev: News
- 1800 Radio Korea: News
- 1800 Radio Moscow (World Service): News
- 1800 Radio RSA: News
- 1800 Radio Tanzania: News
- 1800 Voice of America: News
- 1800 WWCR: USA Radio News [A]
- 1803 Radio Jamahiriya, Libya: News Headlines
- 1815 Radio Berlin Int'l: News
- 1830 Belize Radio One: Network News
- 1830 Christian Science Monitor: News [M-F]
- 1830 Radio Finland: Northern Report [M-F]
- 1830 Radio Kuwait: News
- 1830 Radio Moscow (World Service): News in Brief
- 1830 Radio Netherlands: News [M-A]
- 1830 Radio Polonia: News
- 1830 Radio Tirana: Albania, News
- 1830 Radio Yugoslavia: News
- 1830 Swiss Radio Int'l: News
- 1830 Voice of America: News (Special English)
- 1847 Radio Jamahiriya, Libya: News
- 1852 Radio RSA: News in Brief
- 1855 KUSW: News [M-F]

- 1900 BBC: News Summary
- 1900 Christian Science Monitor: News
- 1900 Deutsche Welle: World News
- 1900 HCJB: Latin American News [M-F]
- 1900 Radio Australia: World and Australian News
- 1900 Radio Canada Int'l: News [M-F]
- 1900 Radio Havana Cuba: Int'l News [M-A]
- 1900 Radio Japan: News
- 1900 Radio Moscow (World Service): News
- 1900 Radio New Zealand Int'l: News
- 1900 Radio Portugal: News [M-F]
- 1900 Radio RSA: News
- 1900 Radio Tanzania: News
- 1900 Spanish National Radio: News
- 1900 Voice of America: News
- 1900 WWCR: USA Radio News [M-F]
- 1930 Christian Science Monitor: News [M-F]
- 1930 Radio Berlin Int'l: News
- 1930 Radio Bucharest: News
- 1930 Radio Budapest: News
- 1930 Radio Canada Int'l: News [M-F]
- 1930 Radio Havana Cuba: Nat'l News [M-T]; Newsbreak [W-A]
- 1930 Radio Moscow (World Service): News in Brief
- 1935 Radiotelevisione Italiana: News
- 1950 HCJB: News [M-F]

- 1955 KUSW: News [M-A]
- 2000 BBC: World News
- 2000 Christian Science Monitor: News
- 2000 Kol Israel: News
- 2000 KVOH: UPI News [S]
- 2000 Radio Australia: International Report
- 2000 Radio Havana Cuba: Int'l News [M-A]
- 2000 Radio Jordan: News
- 2000 Radio Moscow (World Service): News
- 2000 Radio New Zealand Int'l: News
- 2000 Radio Polonia: News
- 2000 Radio RSA: News
- 2000 Voice of America: News
- 2000 Voice of Indonesia: News
- 2005 Radio Pyongyang: News
- 2015 Radio Berlin Int'l: News
- 2025 Radio Havana Cuba: Cuban Nat'l News [M-A]
- 2025 Radiotelevisione Italiana: News
- 2030 Christian Science Monitor: News [M-F]
- 2030 Radio Havana Cuba: News [M-A]
- 2030 Radio Korea: News
- 2030 Radio Moscow (World Service): News in Brief
- 2030 Radio Netherlands: News [M-A]
- 2045 Radio Berlin Int'l: News
- 2052 Radio RSA: News in Brief
- 2055 KUSW: News [M-A]

program

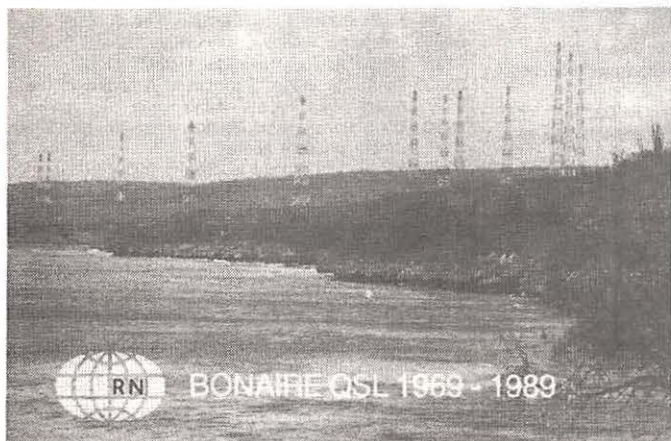
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- 0334 Deutsche Welle: Random Selection. See A 0134.
- 0337 Radio Netherlands: Newslines. See S 0037.
- 0352 Radio Netherlands: Rembrandt Express. See F 0752.
- 0405 HCJB: Music in the Night. See S 1100.
- 0409 Deutsche Welle: Commentary. See S 0109.
- 0423 Deutsche Welle: Panorama. See A 0223.
- 0430 BBC: Here's Humph! All that jazz with Humphrey Lyttelton.
- 0434 Deutsche Welle: Man and Environment. See T 0234.
- 0437 Radio Netherlands: Newslines. See S 0037.
- 0445 BBC: Personal View. See S 0445.
- 0445 BBC: Worldbrief. See F 2315.
- 0505 HCJB: Passport. See M 0135.
- 0509 BBC: Twenty-Four Hours. See S 0509.
- 0509 Deutsche Welle: Newslines Cologne. See M 1109.
- 0530 BBC: Financial News. See M 2310.
- 0534 Deutsche Welle: Random Selection. See A 0134.
- 0540 BBC: Words of Faith. See S 0540.
- 0545 BBC: The World Today. See M 1645.
- 0600 HCJB: The Christian's Hour. Christian messages of inspiration.
- 0609 Deutsche Welle: Commentary. See S 0109.
- 0623 Deutsche Welle: Panorama. See A 0223.
- 0630 BBC: Meridian. See W 0630.
- 0630 HCJB: Music in the Night. See S 1100.
- 0634 Deutsche Welle: Man and Environment. See T 0234.
- 0709 BBC: Twenty-Four Hours. See S 0509.
- 0730 BBC: From the Weeklies. See F 2315.
- 0737 Radio Netherlands: Newslines. See S 0037.
- 0745 BBC: Network UK. See T 0215.
- 0752 Radio Netherlands: Over To You. See S 0052.
- 1100 HCJB: Family Foundations. Details not available at press time.
- 1109 Deutsche Welle: Africa this Week. A review of trends and events on the African continent.
- 1115 BBC: Feature. See A 0130.
- 1130 BBC: Meridian. See W 0630.
- 1130 HCJB: Sounds of Joy. See A 0200.
- 1134 Deutsche Welle: Mailbag Africa. Listeners' questions, music requests, and the club corner.
- 1137 Radio Netherlands: Newslines. See S 0037.
- 1152 Radio Netherlands: Over to You. See S 0052.
- 1200 HCJB: Radio Reading Room. See S 0400.
- 1215 BBC: Multitrack 3. See F 2330.
- 1230 HCJB: Happiness Is. See S 0230.
- 1245 BBC: Sports Roundup. See S 1330.
- 1300 HCJB: Adventures in Odyssey. Lively children's dramas from the 'Focus on the Family' team.
- 1309 BBC: Twenty-Four Hours. See S 0509.
- 1330 BBC: Network UK. See T 0215.
- 1330 HCJB: Visit with Mrs. G. Mrs. G. presents Bible stories for children.
- 1345 HCJB: Adventure Club. A weekly adventure program on Christianity for children.
- 1400 HCJB: Children's Bible Hour. Songs and stories for children.
- 1401 BBC: The Ken Bruce Show. See S 0230.
- 1406 Radio Peace and Progress: Commentary and Reports. See S 1406.
- 1425 Radio Peace and Progress: Music. See S 1425.

SUGGESTIONS? SOMETHING MISSING?

Let us know your corrections, additions, and suggestions of what you'd like to see to Program Manager Kannon Shanmugam at 4412 Turnberry Circle, Lawrence, Kansas 66047.

- 1430 BBC: Sportsworld. Saturday sports, including a preview of English and Scottish soccer matches.
- 1430 HCJB: We Kids. A fast-moving program for children.
- 1437 Radio Netherlands: Newslines. See S 0037.
- 1452 Radio Netherlands: Over to You. See S 0052.
- 1500 HCJB: Critter County. Christian Wyrzen and her friendly critters present a children's program. (Yes, folks, it's no joke.)
- 1509 Deutsche Welle: Africa Highlight. A weekly feature on an important topic concerning Africa.
- 1513 Deutsche Welle: Development Forum. Reports and interviews on projects and progress in Africa and Asia.
- 1515 BBC: Sportsworld. Saturday sports, including direct reports from more than a dozen key soccer contests.
- 1515 HCJB: The Word Today. A discussion of Biblical themes.
- 1530 HCJB: Moody Presents. Christian messages from the Moody Bible Institute.
- 1534 Deutsche Welle: Science and Technology. See M 0234.
- 1600 HCJB: Radio Reading Room. See S 0400.
- 1609 Deutsche Welle: International Talking Point. See S 0419.
- 1615 BBC: Sportsworld. Live commentary on an English or Scottish soccer match.
- 1623 Deutsche Welle: Development Forum. See A 1513.
- 1634 Deutsche Welle: Religion and Society. See S 1509.
- 1636 Radio Peace and Progress: Commentary and Reports. See S 1406.
- 1637 Radio Netherlands: Newslines. See S 0037.
- 1652 Radio Netherlands: Over to You. See S 0052.
- 1655 Radio Peace and Progress: Music. See S 1425.
- 2305 BBC: Words of Faith. See S 0540.
- 2310 BBC: Book Choice. See S 0745.



*Radio Netherlands
QSL from John
Spencer Carson of
Oklahoma*



BONAIRE QSL 1969 - 1989

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- 2055 Voice of Indonesia: News in Brief
- 2100 BBC: News Summary
- 2100 Belize Radio One: News [M-F]
- 2100 BRT, Brussels: News
- 2100 Christian Science Monitor: News
- 2100 Deutsche Welle: World News
- 2100 KVOH: UPI Radio News
- 2100 Radio Australia: World and Australian News
- 2100 Radio Bucharest: News
- 2100 Radio Finland: Northern Report [M-F]
- 2100 Radio Japan: News
- 2100 Radio Moscow (World Service): News
- 2100 Radio New Zealand Int'l: News
- 2100 Radio Peace and Progress: News
- 2100 Radio Yugoslavia: News
- 2100 Spanish National Radio: News
- 2100 Swiss Radio Int'l: News
- 2100 Voice of America: News
- 2100 Voice of Turkey: News
- 2130 Christian Science Monitor: News [M-F]
- 2130 KVOH: UPI Headline News
- 2130 Radio Budapest: News
- 2130 Radio Canada Int'l: News
- 2130 Radio Moscow (World Service): News in Brief
- 2130 Swiss Radio Int'l: News
- 2155 KUSW: News [M-F]
- 2200 BBC: Newshour
- 2200 Christian Science Monitor: News
- 2200 KVOH: UPI Radio News
- 2200 Radio Australia: International Report
- 2200 Radio Berlin Int'l: News
- 2200 Radio Canada Int'l (Asia): News
- 2200 Radio Canada Int'l (Western Europe): News
- 2200 [A-S]: The World at Six [M-F]
- 2200 Radio Havana Cuba: Int'l News [M-A]
- 2200 Radio Moscow (World Service): News
- 2200 Radiotelevisione Italiana: News
- 2200 RAE, Buenos Aires: News
- 2200 Voice of America: News
- 2200 Voice of Free China: News and Commentary
- 2230 Christian Science Monitor: News [M-F]
- 2230 Kol Israel: News
- 2230 KVOH: UPI Headline News
- 2230 Radio Havana Cuba: Cuban Nat'l News [M-A]
- 2230 Radio Moscow (World Service): News in Brief
- 2230 Radio Polonia: News
- 2230 Radio Tirana, Albania: News
- 2230 Voice of America: News (Special English)
- 2233 Radio Jamahiriya, Libya: News Headlines
- 2245 Radio Berlin Int'l: News
- 2255 KUSW: News [M-A]
- 2300 BBC: World [A-S]; Five-Minute News [M-F]
- 2300 Belize Radio One: News [M-F]
- 2300 Christian Science Monitor: News
- 2300 KVOH: UPI Radio News
- 2300 Radio Australia: World and Australian News
- 2300 Radio Canada Int'l: News
- 2300 Radio for Peace Int'l: News [F]
- 2300 Radio Japan: News
- 2300 Radio Moscow: News
- 2300 Voice of America: News
- 2300 Voice of Turkey: News
- 2305 Radio Polonia: News
- 2305 Radio Pyongyang: News
- 2330 BRT, Brussels: News
- 2330 Christian Science Monitor: News [M-F]
- 2330 KVOH: UPI Headline News
- 2330 Radio for Peace Int'l: News [M]
- 2330 Radio Jamahiriya, Libya: News
- 2330 Radio Kiev: News
- 2330 Radio Korea: News
- 2330 Radio Moscow (World Service): News in Brief
- 2330 Radio Tirana, Albania: News
- 2335 Voice of Greece: News [S]
- 2355 KUSW: News [M-A]
- 2355 WRNO: ABC News [F]

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Pennsylvania

frequency

section

0000 UTC [8:00 PM EDT/5:00 PM PDT]

0000-0030	M	Radio Norway International, Oslo	15165				
0000-0030		BBC World Service, London, England	5965	5975	6005	6175	
			6195	7145	7325	9580	
			9590	9915	11750	11945	
			11955	15260	15360	17875	
			17830				
0000-0050		Radio Pyongyang, North Korea	15115	15160			
0000-0055		Radio Beijing, China	9665	9770	11715		
0000-0100		SLBC Domestic Service, Sri Lanka	4940				
0000-0100		Radio New Zealand, Wellington	17705	17680a	15485A		
0000-0100		Adventist World Radio, Costa Rica	9725	11870			
0000-0030		Kol Israel, Jerusalem	9435	11605	15640		
0000-0030		Radio Berlin International, GDR	13690	11890	6080		
0000-0030		Radio Moscow North American Serv	6000	6045	7115	7150	
			7310	9685	12050	17700	
0000-0045		Radio Yugoslavia, Belgrade	6005	5980	11735		
0000-0100		Radio Moscow World Service	7135	17570	17655	17825	
			17890	21635	21690	21790	
0000-0100		Adventist World Radio-Asia, Guam	15125	15225			
0000-0100		All India Radio, New Delhi	9535	9910			
			11715	11745	15110		
0000-0100		CBC Northern Quebec Service, Can	9625	(ML)			
0000-0100		CBN, St. John's, Newfoundland, Can	6160				
0000-0100		CBU, Vancouver, British Columbia	6160				
0000-0100		CFCF, Montreal, Quebec, Canada	6005				
0000-0100		CFCN, Calgary, Alberta, Canada	6030				
0000-0100		CHNS, Halifax, Nova Scotia, Canada	6130				
0000-0100		Christian Science World Svc, Boston	7400	9850	13760		
0000-0100		CKWX, Vancouver, British Columbia	6080				
0000-0100		CFRB, Toronto, Ontario, Canada	6070				

LEGEND

- * The first four digits of an entry are the broadcast start time in UTC. The second four digits represent the end time.
- * In the space between the end time and the station name is the broadcast schedule.

S=Sunday M=Monday T=Tuesday W=Wednesday
H=Thursday F=Friday A=Saturday

If there is no entry, the broadcasts are heard daily. If, for example, there is an entry of "M," the broadcast would be heard only on Mondays. An entry of "M,W,F" would mean Mondays, Wednesdays and Fridays only. "M-F" would mean Mondays through Fridays. "TEN" indicates a tentative schedule and "TES" a test transmission.

The last entry on a line is the frequency. Several codes may be found after a frequency as follows:

- * SSB indicates Single Sideband transmission.
- * v after a frequency indicates that it varies
- * Notations of USB and LSB (upper and lower sideband transmissions) usually refer only to the individual frequency after which they appear.
- * [ML] after a frequency indicates a multi-lingual transmission containing English-language programs. All other frequencies may be assumed to be English language programs directed to various parts of the world.
- * Listings followed by an asterisk (*) are for English lessons and do not contain regularly scheduled programming.

We suggest that you begin with the lower frequencies that a station is broadcasting on and work your way up the dial. Remember that there is no guarantee that a station will be audible on any given day. Reception conditions can change rapidly, though, and if it is not audible one night, it may well be on another.

0000-0100		FEBC Radio Int'l, Philippines	15480				
0000-0100		KUSW, Salt Lake City, Utah	15580				
0000-0100	T-A	KVOH, Rancho Simi, California	17775				
0000-0100		Radio Australia, Melbourne	15160	15240	15320		
			17750	17795	21740		
0000-0100		Radio Beijing, Beijing, China	15130	17715	17855		
0000-0100		Radio Havana Cuba	11820				
0000-0100		Radio Luxembourg, Junglinster	6090				
0000-0100		Radio Tonga, Kingdom of Tonga	5030v				
0000-0100		Spanish National Radio, Madrid	9630	11880			
0000-0100		Voice of America-Americas Service	5995	9775	9815	11580	
			11740	15205			
0000-0100		Voice of America-Caribbean Service	6130	9455	11695		
0000-0100		Voice of America-East Asia Service	7120	9770	11760	15185	
			15290	17735	17820		
0000-0100		WHRI, Noblesville, Indiana	7315	9495			
0000-0100		WINB, Red Lion, Pennsylvania	15145				
0000-0100		WRNO Worldwide, Louisiana	7355				
0000-0100		WWCR, Nashville, Tennessee	15690				
0000-0100		WYFR, Okeechobee, Florida	5985	9505	15440		
0004-0015	S	Radio Nacional, Venezuela	5020	9540	11695	11850	
0030-0045		BBC English by Radio, London, Eng	6195	7145	11945	15280	
			17875				
0030-0100		BBC World Service, London, England	5965	5975	6005	6175	
			7325	9580	9590	9915	
			11750	11955	15260	15360	
0030-0100		Radio Moscow North American Serv	6000	6045	7115	7150	
			7310	9685	12050	17700	
0030-0035		Radio Prague, Czechoslovakia	6055	13715			
0030-0100		HCJB, Quito, Ecuador (alt. prog.)	15230				
0030-0100		Radio Netherlands Int'l, Hilversum	6020	6165	15315		
0000-0100		Radio for Peace Int'l, Costa Rica	7375	(+13660	21566	T-A)	
0035-0100		HCJB, Quito, Ecuador	9745	11775	15155		
0050-0100		Vatican Radio, Vatican City	6150	9605	11780		

0100 UTC [9:00 PM EDT/6:00 PM PDT]

0100-0105		Vatican Radio, Vatican City	6150	9605	11780		
0100-0115		All India Radio, New Delhi	9535	9910			
			11715	11745	15110		
0100-0125		RAI, Rome, Italy	9575	11800			
0100-0125		Radio Netherlands Int'l, Hilversum	6020	6165	15315		
0100-0130		CBC Northern Quebec Service, Can	9625	(ML)			
0100-0130		HCJB, Quito, Ecuador (alt. prog.)	15230				

HOW TO USE THE PROPAGATION CHARTS

Propagation charts can be an invaluable aid to the DXer in determining which frequencies are likely to be open at a given time. To use the propagation charts, choose those for your location (they are divided into east coast, midwest and west coast of North America). Then look for the one most closely describing the geographic location of the station you want to hear.

Once you've located the correct charts, look along the horizontal axis of the graph for the time that you are listening. The top line of the graph shows the Maximum Usable Frequency [MUF] and the lower line the Lowest Usable Frequency [LUF] as indicated on the vertical axis of the graph.

While there are exceptions to every rule (especially those regarding shortwave listening), you should find the charts helpful in determining the best times to listen for particular regions of the world. Good luck!

frequency

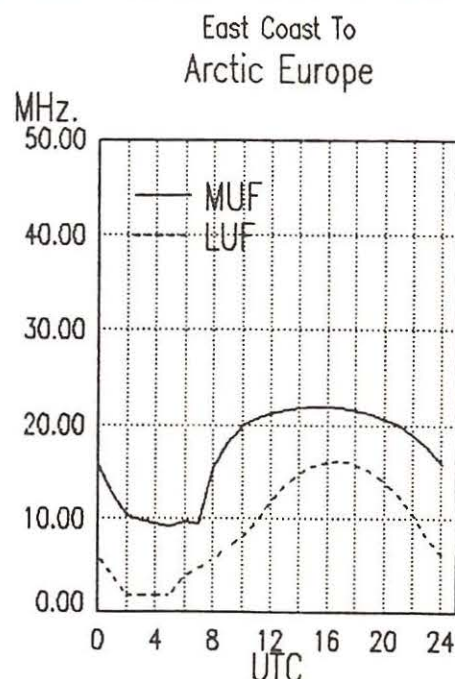
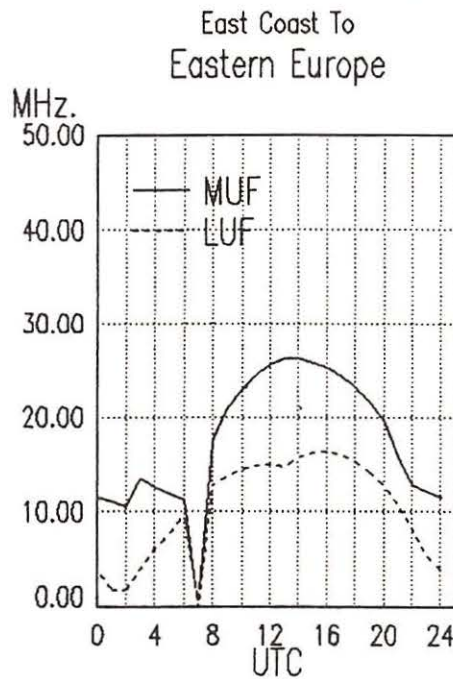
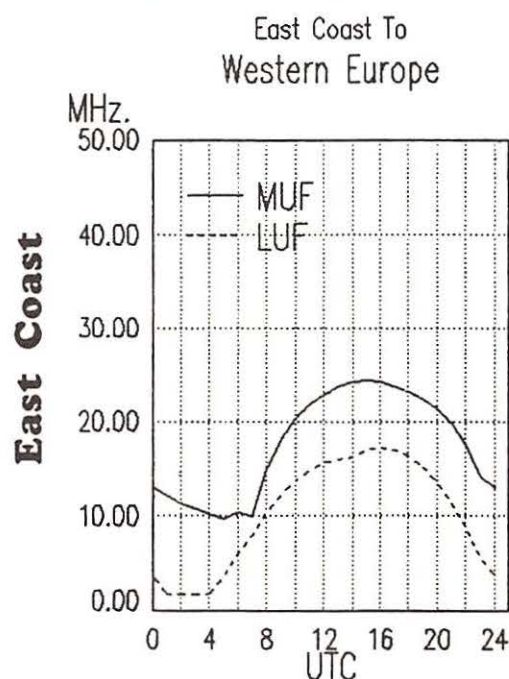
section

0100-0130	Lao National Radio, Vientiane	7116v	
0100-0130	Radio Sweden, Stockholm	7225	9640
0100-0125	Kol Israel, Jerusalem	9435	11605 15640
0100-0130	Radio Budapest, Hungary	6110	9520 9835 11910
		15160	
0100-0145	Radio Berlin International, GDR	13690	11890 6080
0100-0200	Radio Moscow North American Serv	7115	7150 7310 9685
0100-0200	Radio Moscow World Service	7135	7370 17570 17590
0130-0200	Radio Budapest, Hungary	6110	9520 9835 11910
		15160	
0145-0200	Radio Berlin International, GDR	6080	11785 11890 15125
0100-0145	BBC World Service, London, England	5965	5975 6005 6175
		7135	7325 9580 9590
		9915	11750 11955 15260
		15360	21715
0100-0150	Deutsche Welle, Koln, West Germany	6040	6145 9565
		9735	11865
0100-0157	Radio Prague, Czechoslovakia	5930	7345 9540 11680
		11990	13715
0100-0200	M-F BBC (For China, Mongolia, Japan)	15280	21715
0100-0200	S,M Radio Canada Int'l, Montreal	13720	11940 11845 9755
		9535	
0100-0200	Radio New Zealand, Wellington	17705	17680a 15485a
0100-0200	SLBC Domestic Service, Sri Lanka	4940	
0100-0200	CBN, St. John's, Newfoundland, Can	6160	
0100-0200	CBU, Vancouver, British Columbia	6160	
0100-0200	CFCF, Montreal, Quebec, Canada	6005	
0100-0200	CFCN, Calgary, Alberta, Canada	6030	
0100-0200	CHNS, Halifax, Nova Scotia, Canada	6130	
0100-0200	Christian Science World Svc, Boston	7400	9850 13760
0100-0200	CKWX, Vancouver, British Columbia	6080	
0100-0200	CFRB, Toronto, Ontario, Canada	6070	
0100-0200	FEBC Radio Int'l, Philippines	15480	
0100-0200	HCJB, Quito, Ecuador	9745	11775 15155
0100-0200	KUSW, Salt Lake City, Utah	15580	
0100-0200	T-A KVOH, Rancho Simi, California	17775 (ML)	
0100-0200	T-A RAE, Buenos Aires, Argentina	9690	11710
0100-0200	Radio Australia, Melbourne	17630	21525 15240 15320
		15395	17715 17750 17795
		21740	
0100-0200	Radio Havana Cuba	11820	
0100-0200	Radio Japan, Tokyo	17755	17810 17845
0100-0200	Radio Luxembourg, Junglinster	6090	
0100-0200	Radio for Peace Int'l, Costa Rica	7375 (+13660 21566 T-A)	
0100-0200	Radio Tonga, Kingdom of Tonga	5030v	

0100-0200	Spanish National Radio, Madrid	9630	11880
0100-0200	Voice of America-Americas Service	5995	9775 9815 11580
		11740	15205
0100-0200	Voice of America-Caribbean Service	6130	9455
0100-0200	Voice of America-East Asia Service	7115	7205 9740 11705
		15250	21525
0100-0200	Voice of Indonesia, Jakarta	11755	11788
0100-0200	WHRI, Noblesville, Indiana	7315	9495
0100-0200	WINB, Red Lion, Pennsylvania	15145	
0100-0200	WRNO Worldwide, Louisiana	7355	
0100-0200	WWCR, Nashville, Tennessee	15690	
0100-0200	WYFR, Okeechobee, Florida	5985	9505 9680 15440
0130-0140	M-A Voice of Greece, Athens	7430	9395 9420
0130-0200	Radio Austria International, Vienna	9870	9875 13730
0145-0200	BBC Alternative Programming, London	5965	9580 11955 15380
0145-0200	BBC World Service, London, England	5975	6005 6175 7135
		7325	9590 9915 11750
		15260	15360 21715
0155-0200	Vatican Radio, Vatican City	7125	9645 11750

0200 UTC [10:00 PM EDT/7:00 PM PDT]

0200-0215	Vatican Radio, Vatican City	7125	9645 11750
0200-0220	Radio Veritas-Asia, Philippines	15220	15360
0200-0230	BBC Alternative Programming, London	9580	11955 15380
0200-0230	SLBC Domestic Service, Sri Lanka	4940	
0200-0230	BBC World Service, London, England	5975	6005 6050 6110
		6175	7135 7325 9590
		9915	11750 12095 15260
		15360	15390 21715
0200-0230	M-F FEBC Radio Int'l, Philippines	15480	
0200-0230	Voice of America	5995	9775 9815 11580
		15205	
0200-0230	Swiss Radio International, Berne	6095	6135 9725 9885
		12035	17730
0200-0250	Deutsche Welle, Koln, West Germany	6035	7285 9615 9690
		11965	11945
0200-0250	Radio Bras, Brasilia, Brasil	11745	
0200-0300	Adventist World Radio-Asia, Guam	13720	
0200-0230	Radio Berlin International, GDR	6080	11785 11890 15125
0200-0230	Radio Kiev, The Ukraine	7400	9765 17690 15180
		17665	



frequency

section

0200-0300	Radio Moscow N. American Service	6000	6045	7115	7150
		7310	9685	17700	12050
0200-0300	Radio Moscow World Service	7135	13715	17570	21690
0230-0300	Radio Berlin International, GDR	9730	13610	15240	
0200-0225	Kol Israel, Jerusalem	9435	11605	15640	
0200-0300	CBC Northern Quebec Service, Can	9625	(ML)		
0200-0300	CBN, St. John's, Newfoundland, Can	6160			
0200-0300	CBU, Vancouver, British Columbia	6160			
0200-0300	CFCF, Montreal, Quebec, Canada	6005			
0200-0300	CFCN, Calgary, Alberta, Canada	6030			
0200-0300	CHNS, Halifax, Nova Scotia, Canada	6130			
0200-0300	Christian Science World Svc, Boston	9455	9850	13760	
0200-0300	CKWX, Vancouver, British Columbia	6080			
0200-0300	CFRB, Toronto, Ontario, Canada	6070			
0200-0300	HCJB, Quito, Ecuador	9745	11775	15155	
0200-0300	KUSW, Salt Lake City, Utah	15580			
0200-0300	Radio Australia, Melbourne	17630	15240	17715	17750
		17795	21740	15395	21525
		15320			

0200-0300	T-A Radio Canada Int'l, Montreal	9535	9755	11845	11940
		13720			

0200-0300	Radio Bucharest, Romania	5990	9510	9570	11830
		11940	6155		
0200-0300	Radio Cairo, Egypt	9475	9675		
0200-0300	Radio Havana Cuba	9710	11820		
0200-0300	Radio Luxembourg, Junglinster	6090			
0200-0300	Radio RSA, Johannesburg	15120	11935	9580	9615
0200-0300	Radio Tonga, Kingdom of Tonga	5030v			
0200-0300	RAE, Buenos Aires, Argentina	9690	11710		
0200-0300	Voice of America-South Asia Service	7115	7205	9740	11705
		15250	21525		

0211-0230	IRR Voice of the Democratic Alliance of Burma (clandestine: Thai/Burmese border)	7137v			
0200-0300	Voice of Free China, Taiwan	5950	7445	9680	11740
		11860	15345		

0200-0300	WHRI, Noblesville, Indiana	7315	9495		
0200-0300	WRNO Worldwide, Louisiana	7355			
0200-0300	WWCR, Nashville, Tennessee	7520			
0200-0300	WINB, Red Lion, Pennsylvania	15145			
0200-0300	WYFR, Okeechobee, Florida	5985	9505	15440	
0215-0225	Radio Nepal, Katmandu	5005	7165	(alt. 3230)	
0230-0300	BBC World Service, London, England	5975	6005	6050	6175
		7135	7325	9915	11750
		11955	12095	15260	15360
		21715			

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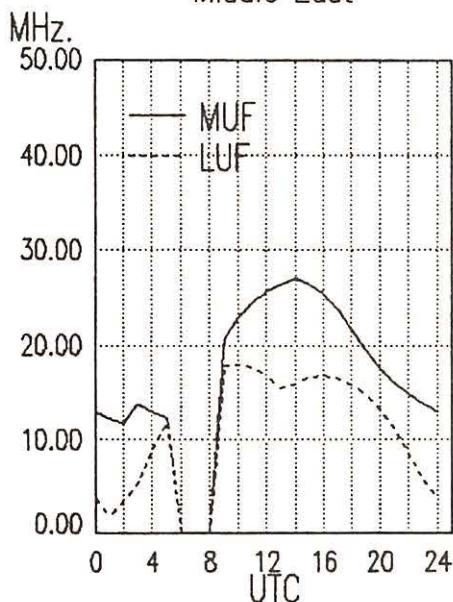
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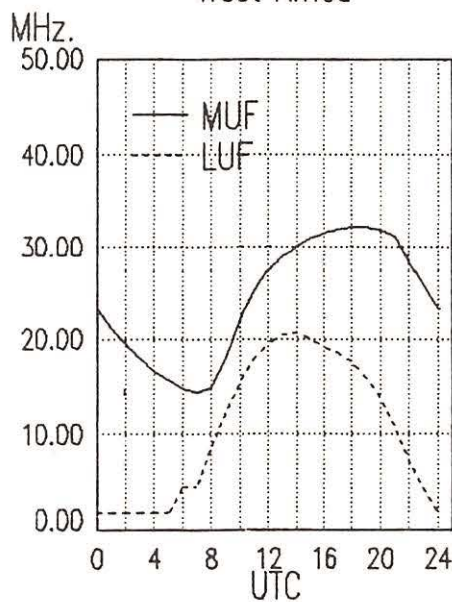
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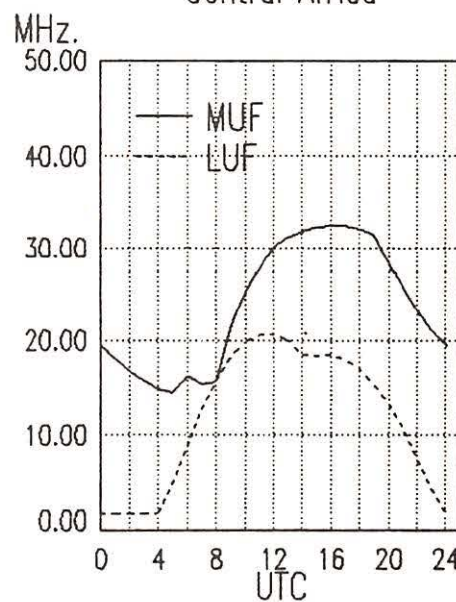
East Coast To
Middle East



East Coast To
West Africa



East Coast To
Central Africa



East Coast

frequency

section

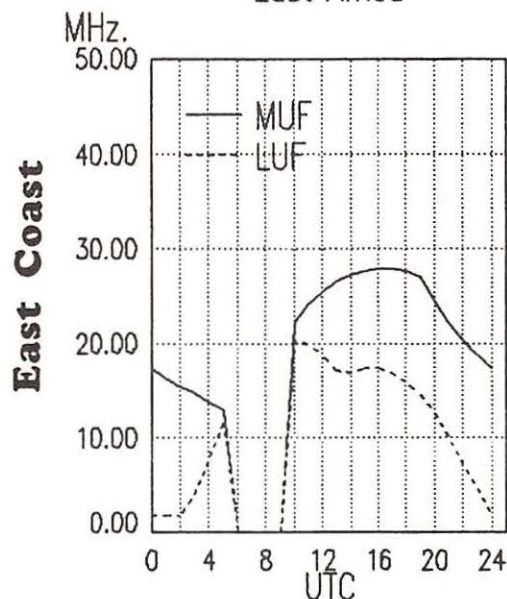
0230-0300	T-A Radio Portugal, Lisbon	9600	9680	9705	11840
0230-0300	Radio Sweden, Stockholm	9695	11705		
0230-0300	Radio Tirana, Albania	9760			
0245-0300	Voice of Eelam (clandestine: Tamil rebels in Sri Lanka) 7000				
0249-0257v	Radio Yerevan, Armenia	7400	9765	15180	17690
		17665			

0300 UTC [11:00 PM EDT/8:00 PM PDT]

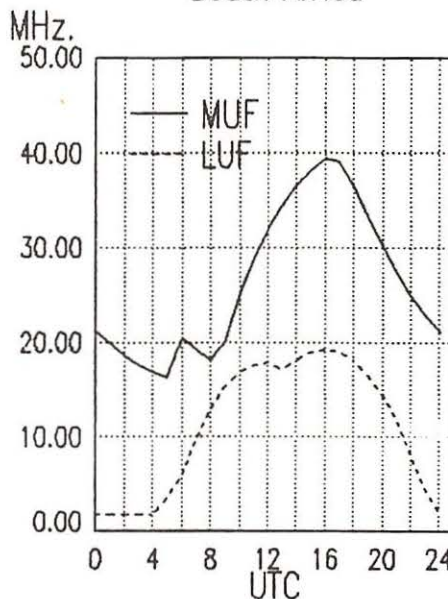
0300-0315	BBC English by Radio, London	11730	11740	15420	
0300-0315	BBC World Service, London, England	3255	5975	6005	6050
		6175	6190	6195	7135
		7325	9410	9600	9670
		9915	11750	11760	11845
		11955	12095	15220	15260
		15310	15420	17705	21715
0300-0330	Radio Cairo, Egypt	9475	9675		
0300-0330	Radio Japan, Tokyo	9645	17825	15325	
		17665			
0315-0330	Radio for Peace Int'l, Costa Rica	7375	USB		
0300-0350	Deutsche Welle, Köln, West Germany	6085	6120	9545	9605
0300-0355	Radio Beijing, China	9690	9770	11715	17855
0300-0357	Radio Prague, Czechoslovakia	5930	7345	9540	11680
		11990	13715		
0300-0400	CBC, Northern Quebec Service, Can	9625	(ML)		
0300-0330	Radio Moscow North American Serv	9825	9895	11790	12050
0300-0345	Radio Berlin International, GDR	11785	15125		
0300-0400	Radio Moscow World Service	6000	7150	7310	21690
0300-0400	Radio Sofia, Bulgaria	15160	15310	11720	11765
		11735			
0300-0400	Voice of Turkey, Ankara	9445	17880		
0330-0400	Radio Moscow North American Serv	12050	11790	7230	9895
0345-0400	Radio Berlin International, GDR	11785	13690	15125	
0300-0400	CBN, St. John's, Newfoundland, Can	6160			
0300-0400	CBU, Vancouver, British Columbia	6160			
0300-0400	CFCF, Montreal, Quebec, Canada	6005			
0300-0400	CFCN, Calgary, Alberta, Canada	6030			
0300-0400	CHNS, Halifax, Nova Scotia, Canada	6130			
0300-0400	Christian Science World Svc, Boston	9455	9850	13760	
0300-0400	CKWX, Vancouver, British Columbia	6080			
0300-0400	CFRB, Toronto, Ontario, Canada	6070			
0300-0400	Faro del Caribe, San Jose, Costa Rica	5055			
0300-0400	HCJB, Quito, Ecuador	11775	15155		

0300-0400	KUSW, Salt Lake City, Utah	9815			
0300-0400	Radio 5, Johannesburg, South Africa	4880			
0300-0400	Radio Australia, Melbourne	17630	15395	15240	15320
		17715	17750	17795	21740
		21525			
0300-0400	Radio Cultural, Guatemala	3300			
0300-0400	Radio Havana Cuba	9710	11820		
0300-0400	Radio Japan, Tokyo	5960	11870	17810	
0300-0400	Radio Oranje, South Africa	3215			
0300-0400	RAE, Buenos Aires, Argentina	11710	9690		
0300-0400	Trans World Radio, Bonaire	9535	11930		
0300-0400	Voice of America-Africa Service	6035	7280	9525	9575
		11835			
0300-0400	Voice of Free China, Taiwan	5950	7445	9680	9765
		11745	15345		
		7315	9495		
0300-0400	WHRI, Noblesville, Indiana	7355			
0300-0400	WRNO Worldwide, Louisiana	7520			
0300-0400	WWCR, Nashville, Tennessee	6065	9505	15566	
0300-0400	WYFR, Okeechobee, Florida	11725			
0310-0325	Vatican Radio, Vatican City	6135	9725	9885	12035
0310-0327	Red Cross Bcasing, Switzerland				
	Tuesday and Friday after last Sunday of the month.				
0315-0330	BBC World Service, London, England	3255	5975	6005	6050
		6175	6190	6195	7135
		7325	9410	9600	9670
		9915	11750	11760	11845
		11955	12095	15220	15260
		15310	17705		
0315-0345	Radio France International, Paris	3965	6045	7135	7175
		7280	9550	9745	9790
		9800	11705	11995	
0330-0400	BBC Alternative Programming, London	3255	6005	6190	9600
		11730	11845	15420	
0330-0400	BBC World Service, London, England	5975	6175	6195	9410
		9670	9915	11760	11955
		12095	15310		
0330-0400	Radio Netherlands Int'l, Hilversum	9590	11720		
0330-0400	Radio Tirana, Albania	9760			
0330-0400	United Arab Emirate Radio, Dubai	11940	15400	15435	17890
0330-0340	All India Radio, New Delhi	3905	4860	9610	11830
		11870	11890	15305	
0340-0350	M-A Voice of Greece, Athens	7430	9395	9420	
0350-0400	RAI, Rome, Italy	11905	15330	17795	
		17690	17665		

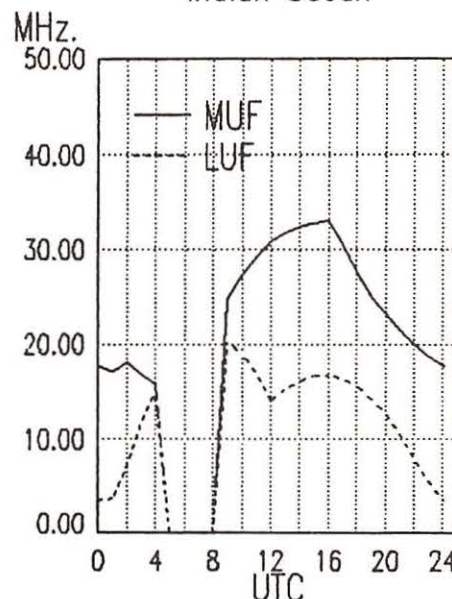
East Coast To
East Africa



East Coast To
South Africa



East Coast To
Indian Ocean



frequency

section

0400 UTC [12:00 AM EDT/9:00 PM PDT]

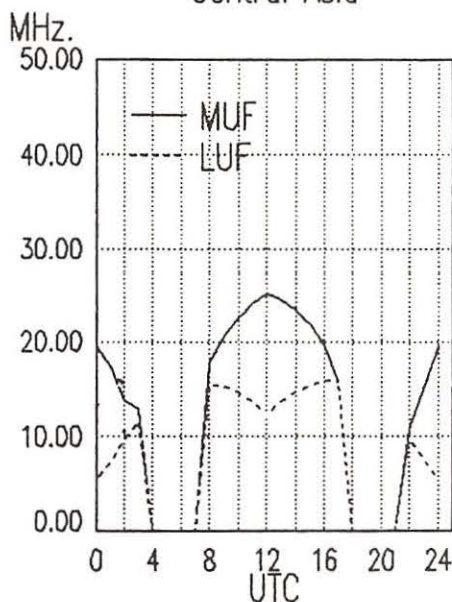
0400-0410	M-F Radio Zambia, Lusaka	4910			
0400-0410	RAI, Rome, Italy	11905	15330	17795	
0400-0415	Kol Israel, Jerusalem	9435	11605	11655	15640
0400-0425	Radio Cultural, Guatemala	3300			
0400-0425	Radio Netherlands Int'l, Hilversum	9590	11720		
0400-0430	BBC World Service, London, England	3255	3955	5975	6005
		6175	6180	6190	6195
		7105	9410	9600	9610
		9670	9915	11760	11955
		12095	15070	15245	15280
		15310	15420	17885	21715
0400-0430	Radio Bucharest, Romania	5990	9510	9570	11830
		11940	6155		
0400-0430	Swiss Radio International, Berne	6135	9725	9885	12035
0400-0430	Radio Moscow North American Serv	11790	12050	15180	9895
0400-0430	Trans World Radio, Bonaire	11930	9530		
0400-0430	Radio Berlin International, GDR	11785	13690	15125	
0400-0500	Radio Moscow World Service	21690	21790	17665	17600
		7150	7310	7390	9765
0400-0430	Voice of America-Africa Service	6035	7280	9525	9575
		11835			
0400-0450	Deutsche Welle, Koin, West Germany	7225	7150	9765	9565
		11765	13790		
0400-0450	Radio Pyongyang, North Korea	13650	15180	17765	
0400-0455	Radio Beijing, China	11695			
0400-0500	CBC, Northern Quebec Service	9625	(ML)		
0400-0500	Radio for Peace Int'l, Costa Rica	7375	USB		
0400-0500	CBN, St. John's, Newfoundland, Can	6160			
0400-0500	CBU, Vancouver, British Columbia	6160			
0400-0500	CFCF, Montreal, Quebec, Canada	6005			
0400-0500	CFCN, Calgary, Alberta, Canada	6030			
0400-0500	CHNS, Halifax, Nova Scotia, Canada	6130			
0400-0500	Christian Science World Svc, Boston	9455	9840	13760	17780
0400-0500	CKWX, Vancouver, British Columbia	6080			
0400-0500	CFRB, Toronto, Ontario, Canada	6070			
0400-0500	HCJB, Quito, Ecuador	11775	15155		
0400-0500	KUSW, Salt Lake City, Utah	9815			
0400-0500	Radio 5, Johannesburg, South Africa	4880			
0400-0500	Radio Australia, Melbourne	21525	21740	15395	15240
		15320	17715	17795	17750
0400-0500	Radio Beijing, China	11695	11840	15195	
0400-0500	Radio Havana Cuba	5965	9710	11760	11820

0400-0500	Radio Oranje, South Africa	3215			
0400-0500	M-AWMLK Bethel, Pennsylvania	9465			
0400-0500	Radio Tonga, Kingdom of Tonga	5030v			
0400-0500	Voice of America-Middle East Serv	3980	5995	6040	6140
		7170	7200	11785	15205
0400-0500	TP Voice of Hope via KFBS, Guam	15225			
0400-0500	Radio Canada International	15275			
0400-0500	WHRI, Noblesville, Indiana	7315	9495		
0400-0500	WRNO Worldwide, Louisiana	6185			
0400-0500	WWCR, Nashville, Tennessee	7520			
0400-0500	WYFR, Okeechobee, Florida	6065	9505		
0425-0440	RAI, Rome, Italy	5990	7275		
0430-0455	Radio Netherlands Int'l, Hilversum	9815	13700		
0430-0500	Radio New Zealand, Wellington	17705	17680a	15485a	
0430-0500	Radio Moscow North American Serv	15180	11790	11770	9895
0430-0500	BBC Alternative Programming, London	6005	6190	9600	11940
		15400	15420		
0430-0500	BBC World Service, London, England	3955	5975	6180	6195
		9410	9915	12095	15070
		15245	15280	15310	21715
0430-0500	Radio for Peace, Costa Rica	7375	13660		
0430-0500	Radio Tirana, Albania	9480	11835		
0430-0500	Voice of America-Africa Service	6035	7280	9525	9575
0455-0500	Voice of Nigeria, Lagos	7255			

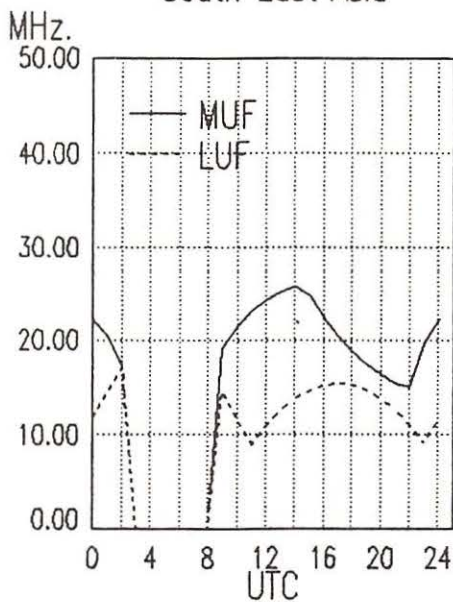
0500 UTC [1:00 AM EDT/10:00 PM PDT]

0500-0505	Radio Oranje, South Africa	3215			
		17630			
0500-0515	M-F Radio Canada Int'l, Montreal	6050	6150	7295	9750
		11775	17840		
0500-0515	Vatican Radio, Vatican City	15190	17730		
0500-0520	Radio 5, Johannesburg, South Africa	4880			
0500-0600	Radio Jordan, Amman	13655			
0500-0530	Voice of America-Middle East Serv	5995	6060	6140	7170
		7200	9670	9700	9740
		11925	15205		
0500-0545	BBC World Service, London, England	3955	5975	6005	6180
		6190	6195	7120	7230
		9410	9580	9600	9640
		11760	11940	12095	15070
		15245	15280	15310	15400

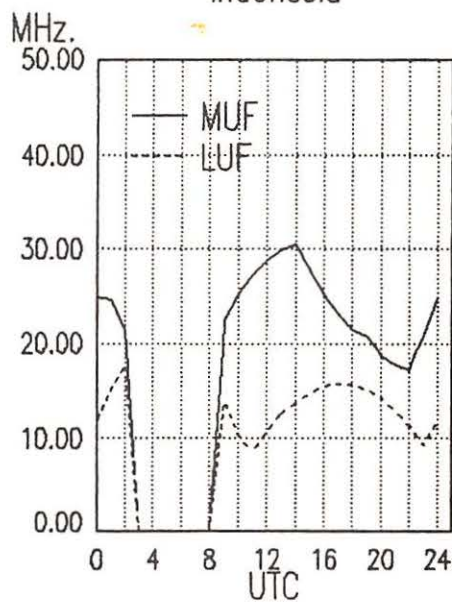
East Coast To
Central Asia



East Coast To
South East Asia



East Coast To
Indonesia



East Coast

frequency

section

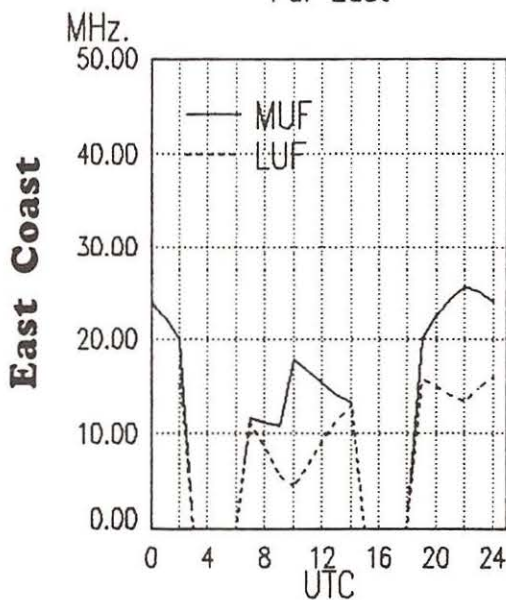
		15420	17885	21470	21715
		9915			
0500-0550	Deutsche Welle, Koln, West Germany	5960	6120	9670	9700
0500-0555	Radio Beijing, China	11840			
0500-0600	CBU, Vancouver, British Columbia	6160			
0500-0600	CFCF, Montreal, Quebec, Canada	6005			
0500-0600	CFCN, Calgary, Alberta, Canada	6030			
0500-0600	CHNS, Halifax, Nova Scotia, Canada	6130			
0500-0600	M-AWMLK Bethel, Pennsylvania	9465			
0500-0600	Christian Science World Svc, Boston	9455	9840	13760	17780
0500-0545	Radio Berlin International, GDR	5965	6115	9645	13610
0500-0600	Radio Moscow North American Serv	11790	9825	7175	7185
0500-0600	Radio Moscow World Service	7310	9765	17590	17610
0515-0600	Radio Berlin International, GDR	15240	17880		
0500-0600	Radio New Zealand, Wellington	17705	17680a	15485a	
0500-0600	CKWX, Vancouver, British Columbia	6080			
0500-0600	CFRB, Toronto, Ontario, Canada	6070			
0500-0600	HCJB, Quito, Ecuador	6230	9745	11775	
0500-0600	KUSW, Salt Lake City, Utah	6175			
0500-0600	Radio Australia, Melbourne	21525	21740	15240	15395
		17715	17750	17795	
		15320			
0500-0600	Radio Havana Cuba	5965	11760	11820	
0500-0600	Radio Japan, Tokyo	11870	17810	17825	17890
0500-0600	Radio for Peace Int., Costa Rica	7375	USB		
0500-0600	Radio Tonga, Kingdom of Tonga	5030v			
0500-0600	Spanish National Radio, Madrid	9630			
0500-0600	Voice of America-Africa Service	3990	6035	7280	9540
		9575			
0500-0600	Voice of America-Middle East Serv	3980	5995	6040	6060
		7170	7200	11785	15205
0500-0600	Voice of Hope via KFBS, Guam	15225			
0500-0600	Voice of Nigeria, Lagos	7255			
0500-0600	WHRI, Noblesville, Indiana	7315	9495		
0500-0600	WRNO Worldwide, Louisiana	6185			
0500-0600	WWCR, Nashville, Tennessee	7520			
0500-0600	WYFR, Okeechobee, Florida	5985	11580	13695	15566
0510-0600	Radio Oranje, South Africa	7285			
0525-0600	Radio 5, Johannesburg, South Africa	11885			
0530-0545	BBC English by Radio, London	6050	6150	7210	9750
0530-0600	Radio Austria International, Vienna	6015	6155	13730	15410
		21490			
0530-0600	Radio Bucharest, Romania	15380	17720	17745	
0530-0600	UAE Radio Dubai	15435	17830	21700	
0545-0600	BBC World Service, London, England	3955	5975	6180	6190

		6195	7120	7230	9410
		9580	9600	9640	11760
		11940	12095	15070	15245
		15280	15310	15400	15420
		17885	21470	21715	
0555-0600	Voice of Malaysia, Kuala Lumpur	6175	9750	15295	

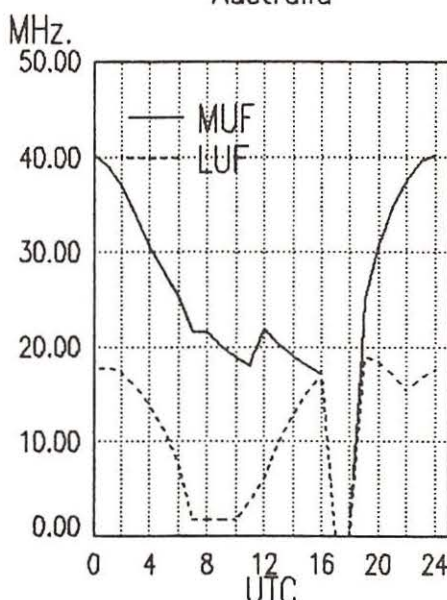
0600 UTC [2:00 AM EDT/11:00 PM PDT]

0600-0615	Vatican Radio, Vatican City	6185	9645		
0600-0630	BBC World Service, London, England	3955	5975	6180	6190
		6195	7120	7150	7230
		9410	9580	9600	9640
		11760	11940	11955	12095
		15070	15245	15280	15310
		15360	15400	15420	17640
		17710	17740	17790	17885
		21470	21715		
0600-0630	Laotian National Radio	7116v			
0600-0700	Radio Pyongyang, North Korea	15180	13650		
0600-0650	CBU, Vancouver, British Columbia	6160			
0600-0700	CFCF, Montreal, Quebec, Canada	6005			
0600-0700	Radio New Zealand, Wellington	17705	17680a	15485a	
0600-0700	Radio 5, South Africa	11885	6065		
0600-0700	WYFR< Okeechobee, Florida	15566	13695	5985	
0600-0700	ABC domestic network, Australia	15425			
0600-0700	M-AWMLK Bethel, Pennsylvania	9465			
0600-0700	CFCN, Calgary, Alberta, Canada	6030			
0600-0700	CHNS, Halifax, Nova Scotia, Canada	6130			
0600-0700	Christian Science World Svc, Boston	9455	9850	11980	
0600-0700	CKWX, Vancouver, British Columbia	6080			
0600-0700	CFRB, Toronto, Ontario, Canada	6070			
0600-0630	S Radio Norway International, Oslo	5980	15165		
0600-0645v	Radio For Peace, Int., Costa Rica	7375	USB		
0600-0700	Radio Moscow North American Serv	7175	9825	7185	7230
0600-0700	Radio Moscow World Service	7310	13715	15260	15280
0630-0700	Radio Sofia, Bulgaria	11720	15160	17820	
0630-0700	Radio Finland, Helsinki	11755	9560	6120	
0600-0650	Deutsche Welle, Koln, West Germany	11765	13790	15185	17875
0600-0700	Voice of the Mediterranean	9765			
0600-0700	HCJB, Quito, Ecuador	6230	9745	11775	
0600-0700	KUSW, Salt Lake City, Utah	6175			
0600-0630	Radio Australia, Melbourne	11910	21740	15160	15240
		21525	15395	17715	

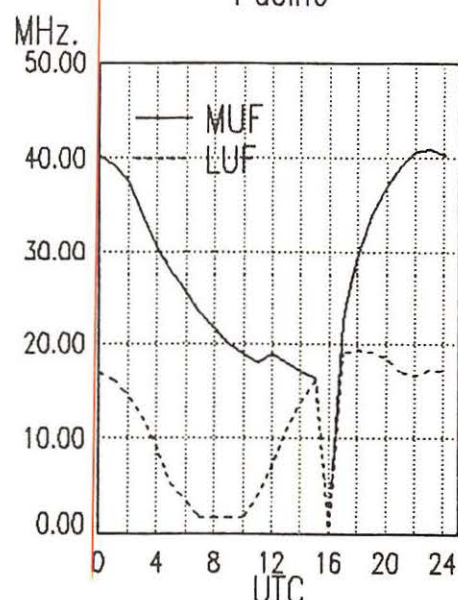
East Coast To
Far East



East Coast To
Australia



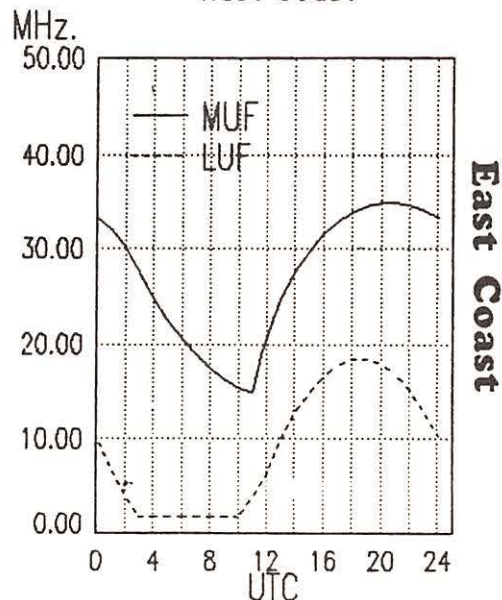
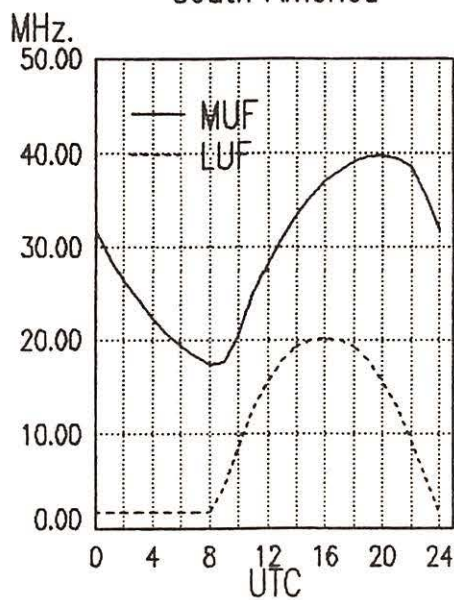
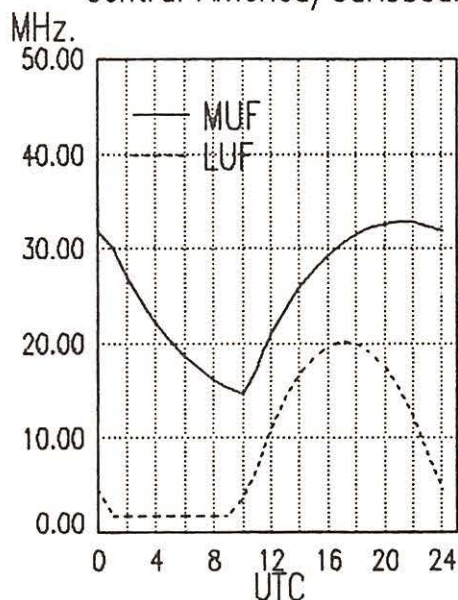
East Coast To
Pacific



Section

0600-0700	Radio Jordan, Amman	13655							15310	15360	15420	17640
0600-0700	Radio Tonga, Kingdom of Tonga	5030v							17710	17740	17885	17790
0600-0700	Voice of America-Africa Service	3990	6035	6080	6125				21470	21660	21715	
		7280	9530	9540	9575							
		11915										
0600-0700	Voice of America-Middle East Serv	3980	5965	5995	6060							
		6095	6140	7170	7200							
		7325	9715	11785	11805							
		11925	15195									
0600-0700	Voice of Hope, Lebanon	6280										
0600-0700	TP Voice of Hope via KFBS, Guam	15225										
0600-0700	Voice of Malaysia, Kuala Lumpur	6175	9750	15295								
0600-0700	S WRNO Worldwide, Louisiana	6185										
0615-0630	Vatican Radio, Vatican City	15190	17730									
0630-0700	Radio Australia, Melbourne	21740	21525	17715	15395							
		15240	15160									
0630-0700	BBC Alternative Programming,London	9600	11940	15400	17740							
0630-0700	BBC World Service, London, England	3955	5975	6180	6190							
		6195	7120	7150	7230							
		9410	9580	9640	11760							
		11955	12095	15070	15245							
		15280	15310	15360	15420							
		17640	17710	17885	17790							
		21470	21715									
0630-0700	Radio Polonia, Warsaw, Poland	6135	7270	15120	9675							
0630-0700	Swiss Radio International, Berne	12030	15430	17570	21520							
0645-0700	BBC English by Radio, London	5875	7260	11945								
0645-0700	A Radio for Peace Int., Costa Rica	7375	USB									
0645-0700	GBC Radio, Accra, Ghana	6130										
0645-0700	HCJB, Quito, Ecuador	9610	11835	(alt. 6050)								
0645-0700	Radio Bucharest, Romania	21550	11940	15335	17720							
		17805	15250									
		9760	11840									

0700 UTC [3:00 AM EDT/12:00 AM PDT]												
0700-0715	Radio Bucharest, Romania	21550	11940	15335	17720							
		17805	15250									
0700-0725	BRT Brussels, Belgium	21815	11695	6035								
0700-0730	BBC World Service, London,England	3955	5975	6180	6190							
		6195	7120	7150	7230							
		7325	9410	9580	9600							
		9640	11760	11940	11955							
		12095	15070	15245	15280							
0700-0800	A Radio for Peace Int'l, Costa Rica											
0700-0750	Radio Pyongyang, North Korea											
0700-0800	Voice of Hope, Lebanon											
0700-0800	CBU, Vancouver, British Columbia											
0700-0800	CFCF, Montreal, Quebec, Canada											
0700-0800	CFCN, Calgary, Alberta, Canada											
0700-0800	CHNS, Halifax, Nova Scotia, Canada											
0700-0800	Christian Science World Svc, Boston								9455	9840	11980	
0730-0800	Radio New Zealand, Wellington								17705	17680a	15485a	
0700-0800	Radio Moscow World Service								7310	12055	17655	21690
0700-0800	CKWX, Vancouver, British Columbia								6080			
0700-0800	CFRB, Toronto, Ontario, Canada								6070			
0700-0800	GBC Radio, Accra, Ghana								6130			
0700-0800	HCJB, Quito, Ecuador								9610	11835	(alt. 6050)	
0700-0800	KNLS, Anchor Point, Alaska								9785			
0700-0800	KUSW, Salt Lake City, Utah								6135			
0700-0730	Radio Australia, Melbourne								21740	9655	21525	15160
									15395	17715	15240	
0700-0800	Radio Japan, Tokyo								15325	17765	17810	17890
									21690			
0700-0800	Radio Jordan, Amman								13655			
0700-0800	Radio Tonga, Kingdom of Tonga								5030v			
0700-0800	Voice of Free China, Taiwan								6130	9745	11925	
0700-0800	TP Voice of Hope via KFBS, Guam								15225			
0700-0800	Voice of Malaysia, Kuala Lumpur								6175	9750	15295	
0700-0800	S WRNO Worldwide, Louisiana								6185			
0710-0800	HCJB, Quito, Ecuador (S. Pacific Sv.)								6130	9745	11925	
0715-0730	BBC English by Radio, London								11860	15105		
0715-0730	Vatican Radio, Vatican City								15190	17730		
0715-0800	S FEBA, Mahe, Seychelles								15275	17820		
0730-0745	BBC English by Radio, London								3975	6010	7210	9825
0730-0800	ABC, Alice Springs, Australia								2310	(ML)		
0730-0800	Radio Prague, Czechoslovakia								21705	17840	11685	
0730-0733	Radio Prague, Czechoslovakia								9505	7345	6055	
0730-0800	ABC, Katherine, Australia								2485			
0730-0800	ABC, Tennant Creek, Australia								2325	(ML)		
0730-0800	Radio Australia, Melbourne								21525	17715	15395	15160
									9655			
0730-0800	BBC Alternative Prgramming,London								9600	11860	15105	
0730-0800	BBC World Service, London, England								5975	6190	7150	7325
									9410	9640	11760	11940
									11955	12095	15070	15280



frequency

section

		15310	15360	15420	17640
		17710	17740	17790	21660
		21715			
0745-0800	Radio Berlin International, GDR	6040	6115	7185	9730
0730-0800	M-F BBC World Service, London, England	6180	17885	21470	15245
0730-0800	Radio Netherlands, Hilversum	9630	15560		
0730-0800	Swiss Radio Int'l European Service	3985	6165	9535	

0800 UTC [4:00 AM EDT/ 1:00 AM PDT]

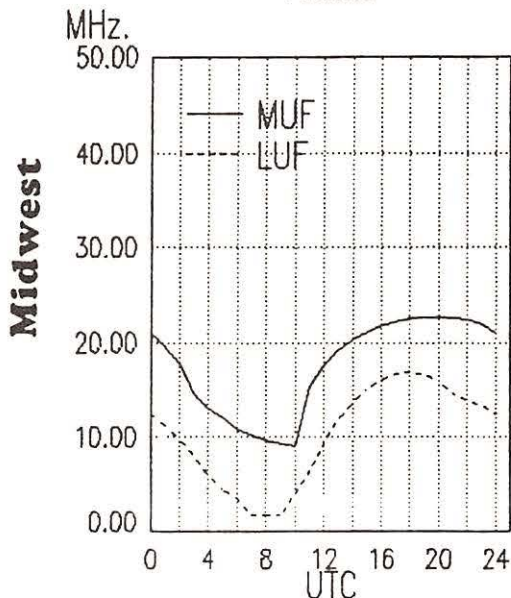
0800-0825	BRT Brussels, Belgium	9925			
0800-0825	Radio Finland, Helsinki	17800	21550		
0800-0825	Radio Netherlands Int'l, Hilversum	9630	15560		
0800-0825	Voice of Malaysia, Kuala Lumpur	6175	9750	15295	
0800-0830	Radio Australia, Melbourne	9580	9655	21525	15395
		17715	17750	15160	11930
0800-0830	S Radio Norway International, Oslo	15165			
0800-0830	Voice of Islam, Dhaka, Bangladesh	15195	11705		
0800-0850	Radio Pyongyang, North Korea	15180	15160	11830	
0800-0900	Radio New Zealand, Wellington	17730	9850a	15485a	
0800-0900	Radio Moscow World Service	7130	9875	12010	15580
0800-0900	ABC, Alice Springs, Australia	2310	(ML)		
0800-0900	ABC, Katherine, Australia	2485			
0800-0900	ABC, Perth, Australia	15425			
0800-0900	ABC, Tennant Creek, Australia	2325	(ML)		
0800-0900	A Radio for Peace Int., Costa Rica	7375	USB		
0800-0900	Voice of Hope, Lebanon	6280			
0800-0900	CBN, St. John's, Newfoundland, Can	6160			
0800-0900	CBU, Vancouver, British Columbia	6160			
0800-0900	CFCF, Montreal, Quebec, Canada	6005			
0800-0900	CFCN, Calgary, Alberta, Canada	6030			
0800-0900	CHNS, Halifax, Nova Scotia, Canada	6130			
0800-0900	Christian Science World Svc, Boston	9455	17855		
0800-0900	CKWX, Vancouver, British Columbia	6080			
0800-0900	CFRB, Toronto, Ontario, Canada	6070			
0800-0900	HCJB, Quito, Ecuador (alt. S. Pac. Svc.)	6130			
0800-0900	HCJB, Quito, Ecuador (S. Pacific Sv)	9745	11925		
0800-0900	KNLS, Anchor Point, Alaska	7355			
0800-0900	KTWR, Agana, Guam	15200			
0800-0900	KUSW, Salt Lake City, Utah	6135			
0800-0900	Radio Jordan, Amman	13655			
0800-0900	Radio Tonga, Kingdom of Tonga	5030v			
0800-0900	Voice of Indonesia, Jakarta	11755	11788		
0800-0900	Voice of Nigeria, Lagos	7255			

0800-0900	S WRNO Worldwide, Louisiana	6185			
0810-0820	Bayerischer Rundfunk, Munich	6085			
0830-0833	Radio Prague, Czechoslovakia	9505	7345	6055	
0830-0855	M-A Radio Netherlands Int'l, Hilversum	9770			
0830-0900	Radio Australia, Melbourne	21525	17750	17715	15395
		11930	11720	9655	9580
0830-0900	Radio Prague, Czechoslovakia	21705	17840	11685	
0830-0900	Radio Austria International, Vienna	6155	13730	15450	21490
0830-0900	Radio Beijing, China	11775	15440	17710	
0830-0900	Radio Netherlands Int'l, Hilversum	17575	21485		
0830-0900	Radio Finland, Helsinki	15245	17800		
0830-0900	Swiss Radio International, Berne	9560	13685	17670	21695
0845-0900	KTWR, Agana, Guam	15210			
0850-0900	All India Radio, New Delhi	5960	5990	6010	6020
		6050	6065	6100	6140
		7110	7140	7150	7160
		7250	7280	7295	9610
		11850	15235	15250	17705

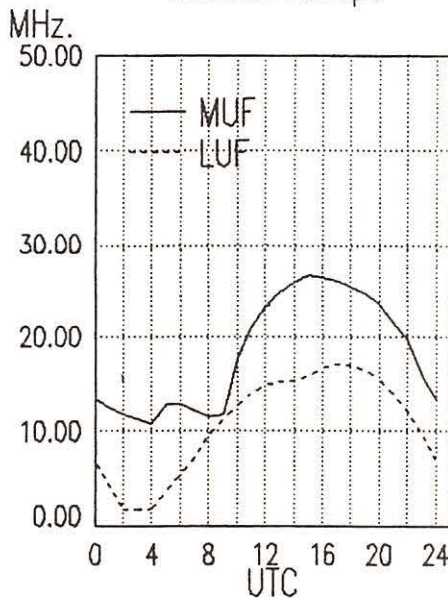
0900 UTC [5:00 AM EDT/2:00 AM PDT]

0900-0920	ABC, Perth, Australia	15425			
0900-0930	Radio Prague, Czechoslovakia	21705	17840	11685	
0900-0925	BRT Brussels, Belgium	21810	26050		
0900-0945	Radio Berlin International, GDR	11890			
0900-0915	Radio Budapest, Hungary	15160	15220	11925	9835
		9585	6110		
0900-0925	Radio Netherlands Int'l, Hilversum	17575	21485		
0900-0930	KTWR, Agana, Guam	15200			
0900-0930	Radio Beijing, China	11775	15440	17710	
0900-0930	S Radio Norway International, Oslo	17740			
0900-0950	Deutsche Welle, Koln, West Germany	6160	9650	15410	11945
		17780	17820	21600	21650
		21680			
0900-1000	ABC, Alice Springs, Australia	2310	(ML)		
0900-1000	ABC, Katherine, Australia	2485			
0900-1000	ABC, Tennant Creek, Australia	2325	(ML)		
0900-1000	S Adventist World Radio, Portugal	9670			
0900-1000	BBC World Service, London, England	5975	6045	6180	6190
		6195	7325	9410	9660
		9740	9750	9760	11750
		11760	11940	12095	15070
		15245	15285	15310	15360
		15400	15420	17640	17705

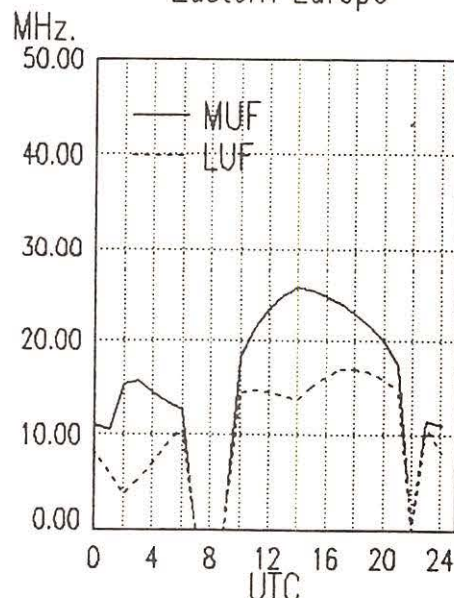
East Coast To
Alaska



Midwest To
Western Europe



Midwest To
Eastern Europe



frequency

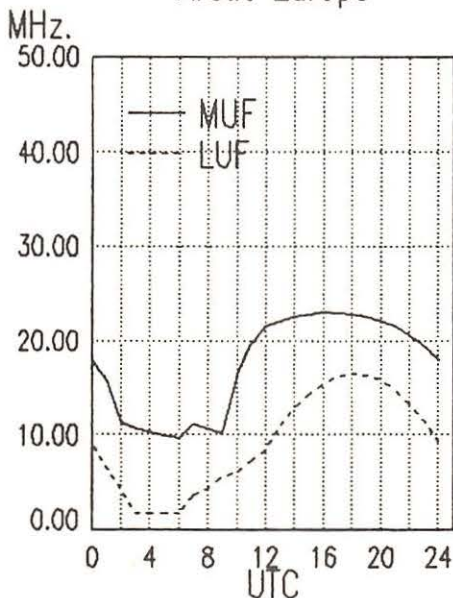
section

0900-1000	CFCF, Montreal, Quebec, Canada	6005	17790	17885	21470	21660
0900-1000	CFCN, Calgary, Alberta, Canada	6030	21710	21715		
0900-1000	CHNS, Halifax, Nova Scotia, Canada	6130				
0900-1000	Christian Science World Svc, Boston	9455	17855			
0900-1000	CKWX, Vancouver, British Columbia	6080				
0900-1000	CFRB, Toronto, Ontario, Canada	6070				
0900-1000	FEBC Radio Int'l, Philippines	11850				
0900-1000	HCJB, Quito, Ecuador (alt. S.Pac.Sv.)	6130				
0900-1000	HCJB, Quito, Ecuador (S. Pac. Serv.)	9745	11925			
0900-1000	KUSW, Salt Lake City, Utah	6135				
0900-0930	Radio Australia, Melbourne	9580	9655	9760	11720	
		15415	17715	11930	6020	
0900-1000	S Radio Bhutan, Thimpu	5023v				
0900-1000	Radio Japan, Tokyo	17810				
0900-1000	Radio Jordan, Amman	13655				
0900-1000	Radio Metro, Johannesburg, S.Africa	11805				
0900-1000	Radio Moscow World Service	17890	21660	21725	9875	
0900-1000	Radio New Zealand, Wellington	17730	9850a	15485a		
0900-1000	A Radio for Peace Int., Costa Rica	7375	USB			
0900-1000	UN Radio Tanga, Nagara, Japan	3925				
0900-1000	Radio Tonga, Kingdom of Tonga	5030v				
0900-1000	Voice of Hope, Lebanon	6280				
0900-1000	Voice of Nigeria, Lagos	7255				
0900-1000	WHRI, Noblesville, Indiana	7355	9495			
0900-1000	S WRNO Worldwide, Louisiana	6185				
0920-1000	ABC, Perth, Australia	6140				
0930-1045	Radio Budapest, Hungary	15160	15220	11925	9835	
		9585	6110			
0930-1000	Radio Australia, Melbourne	15415	11930	9760	9655	
		9580	6020	5995		
0930-1000	Radio Afghanistan, Kabul	17720	15350	4940	6085	
		9635				
0935-0945	IRR Al-Quds Radio (Palestinian clandestine: Syria)	7460	(alt. 4320)	ML		
0930-0955	RRI Surabaya, Jawa Timur, Indonesia	2377				
0930-1000	BBC English by Radio, London	7180	11955	15280	17830	
0930-1000	CBN, St. John's, New Foundland	6160				
0930-1000	KTWR, Agana, Guam	11805				
0930-1000	Radio Beijing, China	11775	15440	17710		
0945-1000	Radio Berlin International, GDR	6115				
0945-0948	Radio Prague, Czechoslovakia	9505	7345	6055		
0945-1000	Radio Budapest, Hungary	7220	9585	9835	11910	
		11925	15160	15220		

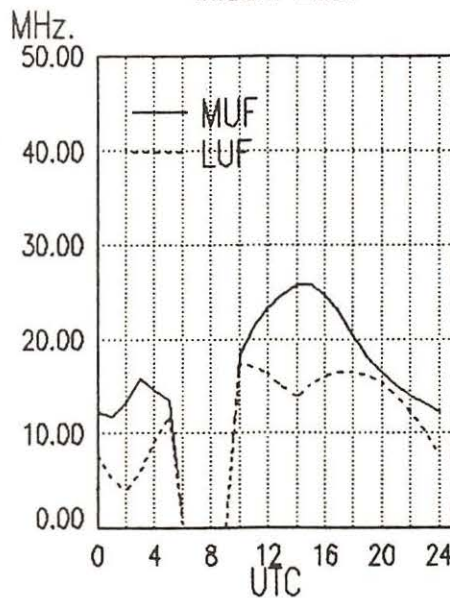
1000 UTC [6:00 AM EDT/3:00 AM PDT]

1000-1015	KTWR, Agana, Guam	11805			
1000-1030	Kol Israel, Jerusalem	11585	17575	21780	
1000-1030	Radio Afghanistan, Kabul	17720	15350	4940	6085
		9635			
1000-1030	Radio Beijing, China	11775	15440	17710	
1000-1030	Radio Berlin International, GDR	6115			
1000-1030	Radio New Zealand, Wellington	17730	9850a	15485a	
1000-1030	A Radio for Peace Int., Costa Rica	7375	USB		
1000-1030	Swiss Radio International, Berne	9560	13685	17670	21695
1000-1030	Voice of Vietnam, Hanoi	12010	15010	9840	
1000-1100	ABC, Alice Springs, Australia	2310	(ML)		
1000-1100	ABC, Katherine, Australia	2485			
1000-1100	ABC, Perth, Australia	9610			
1000-1100	ABC, Tennant Creek, Australia	2325	(ML)		
1000-1100	Adventist World Radio-Asia, Guam	13720			
1000-1100	Radio Moscow World Service	15260	15280	17645	17570
1000-1100	All India Radio, New Delhi	17685	17387	15050	15335
		21735			
1000-1100	BBC World Service, London, England	5975	6045	6180	6190
		6195	7325	9410	9660
		9740	9750	9760	11750
		11760	11940	12095	15070
		15285	15310	15360	15400
		15420	17640	17705	17790
		17885	21470	21660	21710
1000-1100	CBN, St. John's, Newfoundland, Can	6160			
1000-1100	CFCF, Montreal, Quebec, Canada	6005			
1000-1100	CFCN, Calgary, Alberta, Canada	6030			
1000-1100	CHNS, Halifax, Nova Scotia, Canada	6130			
1000-1100	Christian Science World Svc, Boston	9455	9495		
1000-1100	CKWX, Vancouver, British Columbia	6080			
1000-1100	CFRB, Toronto, Ontario, Canada	6070			
1000-1100	FEBC Radio Int'l, Philippines	11850			
1000-1100	HCJB, Quito, Ecuador	9745	11925		
1000-1100	KTWR, Agana, Guam	11805			
1000-1100	KUSW, Salt Lake City, Utah	6135			
1000-1030	Radio Australia, Melbourne	9580	9655	15415	11930
		9770	5995	6020	
1000-1100	Radio Jordan, Amman	13655			
1000-1100	Radio Metro, Johannesburg, S.Africa	11805			
1000-1100	Voice of America-Caribbean Service	9590	11915		

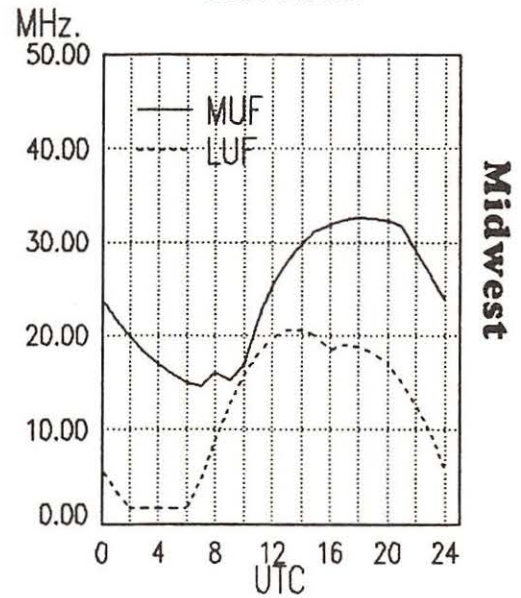
Midwest To
Arctic Europe



Midwest To
Middle East



Midwest To
West Africa



frequency section

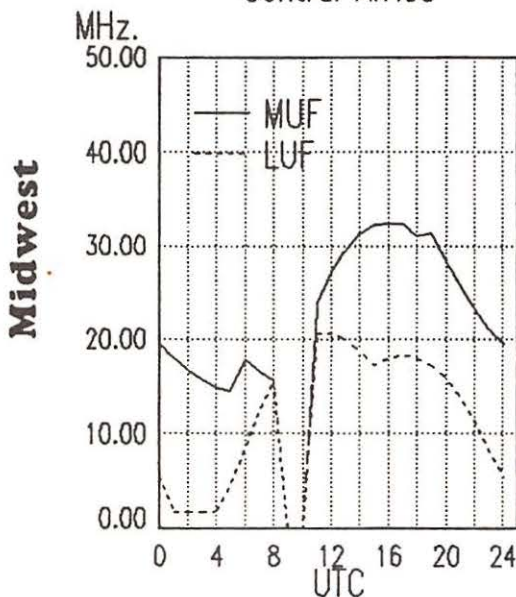
1000-1100	Voice of America-Pacific Service	5985	11720	15425
1000-1100	Voice of Nigeria, Lagos	7255		
1000-1100	S WRNO Worldwide, Louisiana	6185		
1030-1100	Radio Australia, Melbourne	15415	11930	9770 9580
		6020	5995	
1030-1100	Adventist World Radio, Forli, Italy	7230		
1030-1045	Radio Budapest, Hungary	15190	6110	9835 15160
		15220		
1030-1100	Radio Netherlands Int'l, Hilversum	6020	9505	
1045-1049	Radio Prague, Czechoslovakia	9505	7345	6055
1050-1100	Radio Finland, Helsinki	15400	21550	

1100 UTC [7:00 AM EDT/4:00 AM PDT]

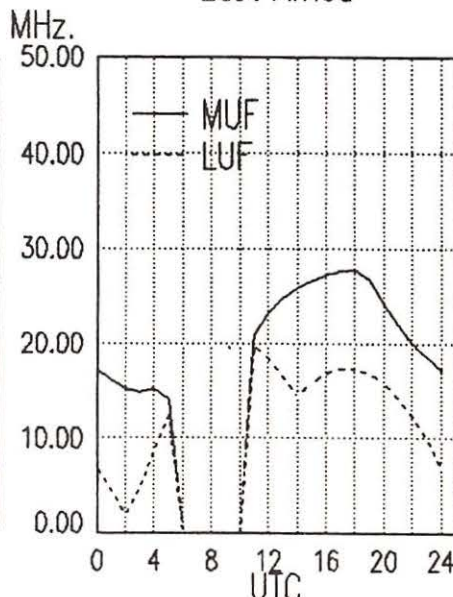
1100-1115	Radio Pakistan	21575	17555	
1100-1115	BBC World Service, London, England	5965	5975	6045 6180
		6190	6195	7325 9410
		9660	9740	9750 9760
		11750	11760	11775 11940
		12095	15070	15140 15310
		15420	17640	17705 17790
		17885	21470	21660
		15285	15360	15400
1100-1125	Radio Netherlands Int'l, Hilversum	6020	9505	
1100-1130	Radio Mozambique, Maputo	11835	11818	9525
1100-1130	Voice of the Democratic Alliance of Burma (clandestine: Thai/Burmese border)	7137v		
1100-1130	Adventist World Radio, Forli, Italy	7230		
1100-1130	Swiss Radio International, Berne	13635	15570	17830 21770
1100-1150	Radio Pyongyang, North Korea	11735	9977	9645
1100-1150	Deutsche Welle, Köln, West Germany	15410	17765	17800 21600
1100-1155	Radio Beijing, China	9665		
1100-1200	ABC, Alice Springs, Australia	2310	(ML)	
1100-1115	Radio Finland, Helsinki	15400	21550	
1100-1145	Radio Berlin International, GDR	17780	13690	9665 6115
1100-1200	Radio Moscow World Service	6000	9765	15320 17810
1100-1200	ABC, Brisbane, Australia	9660		
1100-1200	ABC, Katherine, Australia	2485		
1100-1200	ABC, Perth, Australia	9610		
1100-1200	ABC, Tennant Creek, Australia	2325	(ML)	
1100-1200	Trans World Radio, Bonaire	11815	15345	
1100-1200	CBN, St. John's, Newfoundland, Can	6160		
1100-1200	CFCF, Montreal, Quebec, Canada	6005		
1100-1200	CFCN, Calgary, Alberta, Canada	6030		

1100-1200	CHNS, Halifax, Nova Scotia, Canada	6130		
1100-1200	Christian Science World Svc, Boston	9455	9495	
1100-1200	CKWX, Vancouver, British Columbia	6080		
1100-1200	CFRB, Toronto, Ontario, Canada	6070		
1100-1200	KUSW, Salt Lake City, Utah	9850		
1100-1130	Radio Australia, Melbourne	11930	6020 6080	7215
		9580	9710	9770 11800
1100-1200	Radio Beijing, China	17855		
1100-1200	Radio Japan, Tokyo	6120	11815	11840
1100-1200	Radio Jordan, Amman	13655		
1100-1200	Radio RSA, Johannesburg	11805	25790	11900
1100-1200	Voice of America-Caribbean Service	9590	11915	
1100-1200	Voice of America-East Asia Service	5985	6110	9760 11720
		15155	15425	
1100-1200	S WRNO Worldwide, Louisiana	6185		
1115-1145	Radio Nepal, Katmandu (External Svc.)	5005		
1115-1130	BBC World Service, London, England	5965	5975	6045 6180
		6190	6195	7325 9410
		9660	9740	9750 9760
		11760	11775	11940 12095
		15070	15140	15285 15310
		15420	15360	15400 17640
		17705	17790	17885 21470
		21660	21710	25750
1115-1130	Vatican Radio, Vatican City	17840	21485	
1130-1200	Radio Berlin International, GDR	11970	15440	17880 21465
1130-1145	BBC English by Radio, London	17810	21490	
1130-1145	RRI Yogyakarta, Yogyakarta, Indonesia	5046		
1130-1200	BBC World Service, London, England	5965	5975	6045 6190
		6195	7325	9410 9660
		9740	9750	9760 11760
		11775	11940	12095 15070
		15140	15310	15420 17640
		17705	17790	17885 21470
		21660	21710	25750
1130-1200	HCJB, Quito, Ecuador	11740		
1130-1200	Radio Australia, Melbourne	11930	11800	9770 9710
		9580	7215	6080 6035
1130-1200	Radio Thailand	11905	9655	4830
1130-1200	Radio Austria International, Vienna	6155	13730	15430 21475
1130-1200	Radio Netherlands Int'l, Hilversum	5955	9715	17575 21480
		21615		
1130-1200	Voice of the Islamic Republic of Iran	7190	7230	9695
1135-1140	All India Radio, New Delhi	6065	7110	9610 9675
		11620	11850	15320

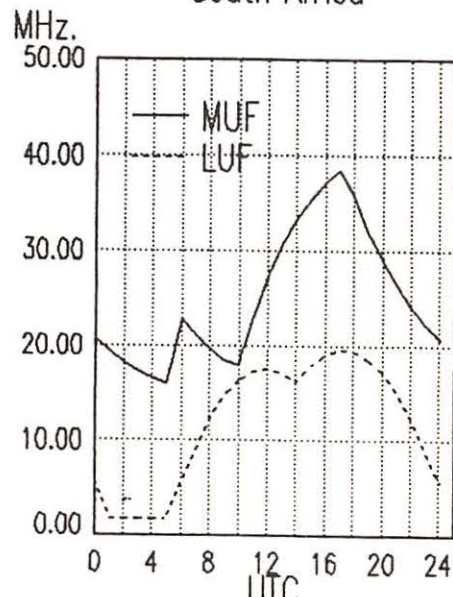
Midwest To
Central Africa



Midwest To
East Africa



Midwest To
South Africa



frequency

section

1145-1152 Radio Prague, Czechoslovakia 9505 7345 6055
1145-1200 A-H BBC English by Radio, London 7180 15280

1200 UTC [8:00 AM EDT/5:00 AM PDT]

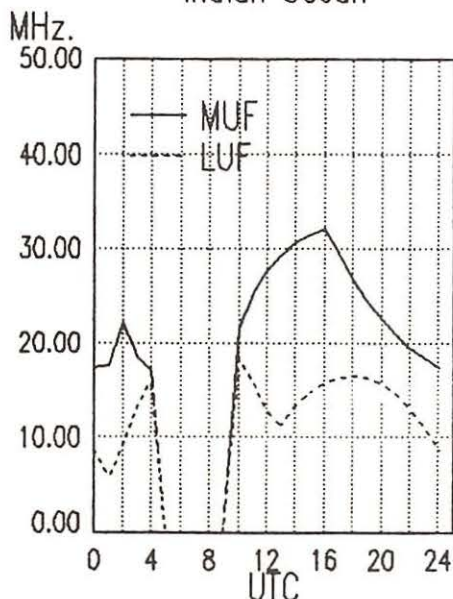
1200-1230	Radio Thailand	11905	9655	4830
1200-1215	Radio Berlin International, GDR	11970	15440	17880 21465
1200-1225	M-F Radio Finland, Helsinki	15400	21550	
1200-1230	Radio Yugoslavia, Belgrade	11735	15165	15325
1200-1215	BBC English by Radio, London	6065	9680	11920
1200-1215	Vatican Radio, Vatican City	17840	17865	21485 21515
1200-1225	Radio Netherlands Int'l, Hilversum	5955	9715	17575 21480
		21615		
1200-1225	Voice of Islamic Republic of Iran	7190	7215	7230 9695
1200-1230	Radio East Africa,	9585		
1200-1230	S Radio Norway International, Oslo	15165		
1200-1230	Radio Tashkent, Uzbekistan	5945	9540	9600 11785
		15470		
1200-1300	ABC, Alice Springs, Australia	2310	(ML)	
1200-1300	ABC, Brisbane, Australia	9660		
1200-1300	M-F Radio Canada Int'l, Montreal	11855	17820	9635 11720
1200-1300	ABC, Katherine, Australia	2485		
1200-1300	ABC, Perth, Australia	9610		
1200-1300	Trans World Radio, Bonaire	11815	15345	
1200-1300	ABC, Tennant Creek, Australia	2325	(ML)	
1200-1300	Adventist World Radio, Costa Rica	9725	11870	
1200-1300	BBC World Service, London, England	5965	5975	6045 6190
		6195	7325	9410 9660
		9740	9750	9760 11750
		11760	11775	11940 12095
		15070	15140	15310 17640
		17705	17790	17885 21470
		21660	21710	25750
1200-1300	CBU, Vancouver, British Columbia	6160		
1200-1300	CFCF, Montreal, Quebec, Canada	6005		
1200-1300	CFCN, Calgary, Alberta, Canada	6030		
1200-1300	CHNS, Halifax, Nova Scotia, Canada	6130		
1200-1300	Christian Science World Service	6150	9465	11930 15285
1200-1300	CKWX, Vancouver, British Columbia	6080		
1200-1300	Radio Moscow World Service	9765	11840	15475 17810
1200-1300	CFRB, Toronto, Ontario	6070		
1200-1300	HCJB, Quito, Ecuador	11740	15115	17890
1200-1300	KUSW, Salt Lake City, Utah	9850		

1200-1230	Radio Australia, Melbourne	11930	6080	7205 11800
		7215	9580	9710 9770
1200-1300	Radio Beijing, China	9530	9665	11600 15450
1200-1230	Radio Bucharest, Romania	15340	17720	
1200-1300	Radio Jordan, Amman	13655		
1200-1300	Radio RSA, Johannesburg	11900	11805	21590
1200-1300	Voice of America-East Asia Service	6110	9760	11715 15155
		15425		
1200-1300	WHRI, Noblesville, Indiana	11790		
1200-1300	S WRNO Worldwide, Louisiana	9715		
1215-1300	Radio Berlin International, GDR	11705	15240	
1200-1300	WYFR, Okeechobee, Florida	5950	7355	11830 17640
1215-1225	Radio Bayrak, Northern Cyprus	6150		
1215-1230	S BBC English by Radio, London	6125		
1230-1300	Radio Australia, Melbourne	11930	9770	9580 7215
		7205	6080	6035 6020
1230-1240	Voice of Greece, Athens	17550	15630	11645
1230-1300	Voice of Turkey, Ankara	17785		
1230-1300	Voice of Vietnam, Hanoi	15010	12010	9840
1230-1300	M-SBRT Brussels, Belgium	21820		
1230-1300	M-F BRT Brussels, Belgium	21815		
1230-1300	BBC English by Radio, London	6125	9515	9560 9600
		9635	11710	11780 11845
		12040	15115	15390 15435
		17695	17880	17795 21695
1230-1300	Radio Bangladesh, Dhaka	15195	11705	
1230-1300	Radio France International, Paris	9805	11670	15155 15195
		17650	21635	21645
1230-1300	Radio Sweden, Stockholm	15190	21570	17740
1245-1300	Radio Prague, Czechoslovakia	9505	7345	6055
1245-1300	Radio Berlin International, GDR	11970	15440	17880 21465

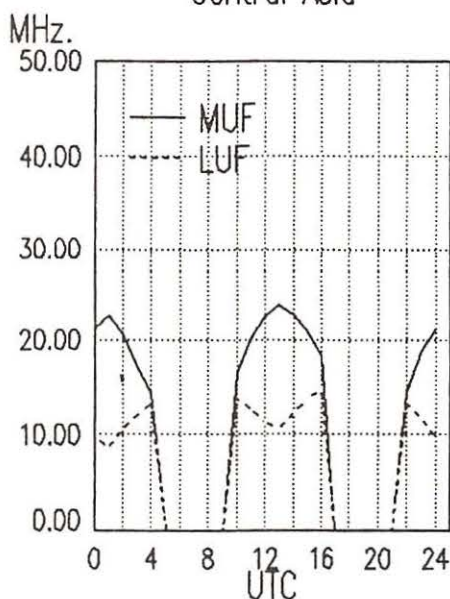
1300 UTC [9:00 AM EDT/6:00 AM PDT]

1300-1330	S Radio Norway International, Oslo	9590		
1300-1330	Radio Canada Int'l, Montreal	11955	15385	
1300-1330	S Trans World Radio, Bonaire	15345	11815	
1300-1330	Swiss Radio Int'l European Service	3985	6165	9535
1300-1345	BBC World Service, London, England	5965	5975	5995 6045
		6190	6195	7180 7325
		9410	9660	9740 9750
		9760	11750	11775 11940
		12095	15070	15105 15140
		15310	15420	17640 17705

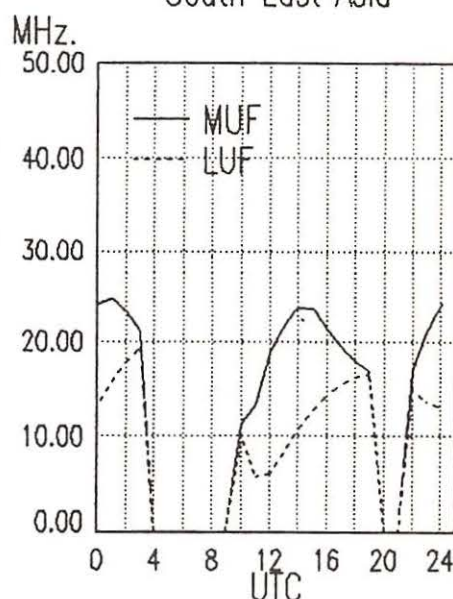
Midwest To
Indian Ocean



Midwest To
Central Asia



Midwest To
South East Asia



Midwest

frequency

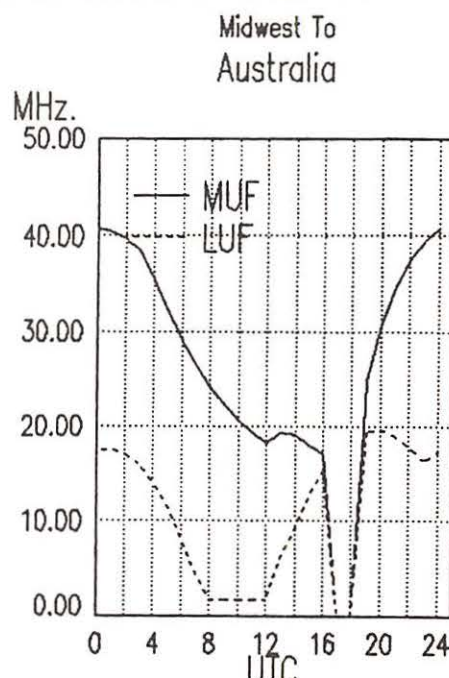
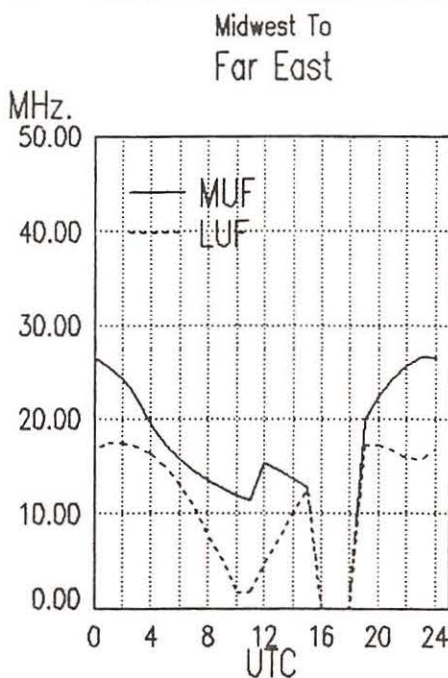
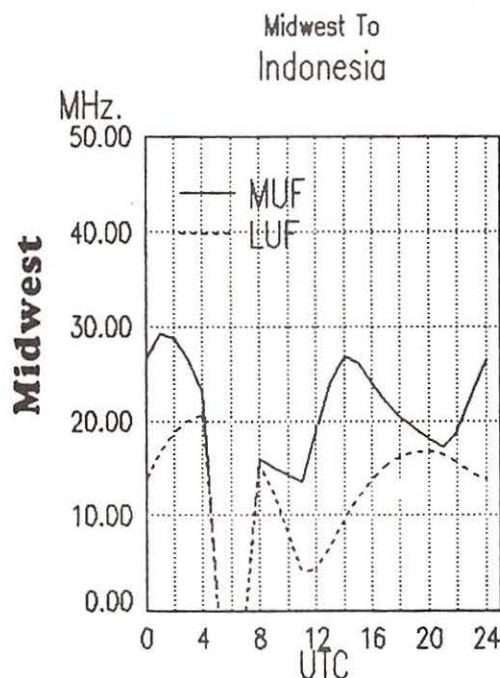
section

1300-1350	Radio Pyongyang, North Korea	17790	17885	21470	21660
		21710	25750		
		9325	9345	9645	13650
		15180			
1300-1400 S	Radio Canada Int'l, Montreal	11955	17820	11720	
1300-1400	ABC, Alice Springs, Australia	2310			
1300-1400	ABC, Brisbane, Australia	9660			
1300-1400	ABC, Katherine, Australia	2485			
1300-1400	ABC, Perth, Australia	9610			
1300-1400	ABC, Tennant Creek, Australia	2325 (ML)			
1300-1400	Adventist World Radio, Costa Rica	9725	11870		
1300-1400	CBC Northern Quebec Service, Can	9625			
1300-1400	CBN, St. John's, Newfoundland	6160			
1300-1400	CBU, Vancouver, British Columbia	6160			
1300-1400	CFCF, Montreal, Quebec, Canada	6005			
1300-1400	CFCF, Calgary, Alberta, Canada	6030			
1300-1400	CHNS, Halifax, Nova Scotia, Canada	6130			
1300-1400	Christian Science World Service	6150	9465	11930	15285
1300-1400	CKWX, Vancouver, British Columbia	6080			
1300-1400	CFRB, Toronto, Ontario, Canada	6070			
1300-1330	Radio Berlin International, GDR	11970	15440	17880	21465
1300-1345	Radio Berlin International, GDR	6115			
1300-1400	Radio Korea, Seoul	15575	9750	9570	
1300-1400	Radio Moscow World Service	11840	15475	17810	17700
1300-1400	FEBC Radio Int'l, Philippines	11850			
1300-1400	HCJB, Quito, Ecuador	11740	15115	17890	
1300-1400	KUSW, Salt Lake City, Utah	9850			
1300-1400	Radio Australia, Melbourne	5995	11930	6080	6020
		7205	9580	21525	6035
1300-1400	Radio Beijing, China	9530	11600		
1300-1400	Radio Bucharest, Romania	11940	15365	17850	21550
1300-1400	Radio Jordan, Amman	13655			
1300-1400	Radio Sta. Peace & Progress, Moscow	11870	15420	15330	15130
		15320	17870	17880	17635
		15535			
1300-1400	Radio RSA, Johannesburg	17710	11805	21590	
1300-1400	Voice of America-East Asia Service	6110	9760	11715	15155
		15425			
1300-1400	WHRI, Noblesville, Indiana	9465	11790		
1300-1400 S	WRNO Worldwide, Louisiana	9715			
1300-1400	WWCR, Nashville, Tennessee	15690			
1300-1400	WYFR, Okeechobee, Florida	5950	9705	11580	11830
		13695	15215	17640	
1330-1400	All India Radio, New Delhi	11760	9565		
1330-1400	Radio Austria International, Vienna	15430			

1330-1400 S	Radio Finland, Helsinki	21550	15400
1330-1400	Laotian National Radio	7116v	
1330-1400 A	Trans World Radio, Bonaire	11815	15345
1330-1400	Radio Tashkent, Uzbekistan	5945	9540 9600 11785
		15470	
1330-1400	Swiss Radio International, Berne	9620	11695 13635 15570
		17830	21695
1330-1400	UAE Radio, Dubai	15320	17775 21605
1330-1400	Voice of Vietnam, Hanoi	9840	15010 12010
1345-1350	Radio Prague, Czechoslovakia	9505	7345 6055
1345-1400	Radio Berlin International, GDR	9730	
1345-1400	Voice of Eelam (clandestine:northern Sri Lanka)	7000	
1345-1400	BBC World Service, London, England	5975	5995 6045 6190
		6195	7180 7325 9410
		9660	9740 9750 9760
		11750	11940 12095 15070
		15140	15310 15420 17640
		17705	17790 17885 21470
		21660	21710 25750

1400 UTC [10:00 AM EDT/7:00 AM PDT]

1400-1420	Radio Jordan, Amman	13655	
1400-1430	ABC, Alice Springs, Australia	2310 (ML)	
1400-1430	ABC, Tennant Creek, Australia	2325 (ML)	
1400-1430	BBC English by Radio, London	11860	15420 17740
1400-1430	Radio Juba, Sudan	9540/9550	
1400-1430	Radio France International, Paris	11925	21780
1400-1430 S	Radio Norway International, Oslo	21710	
1400-1430	Radio Polonia, Warsaw, Poland	6095	7285
1400-1430	Radio Berlin International, GDR	9730	
1400-1430	Radio Sweden, Stockholm	11905	17740
1400-1430	Radio Tirana, Albania	9500	11895
1400-1455	Radio Beijing, China	7405	
1400-1500	Radio SPLA (clandestine: Sudan)	11710	9550
1400-1500	ABC, Brisbane, Australia	9660	
1400-1500 S	Radio Canada Int'l, Montreal	11955	11720 17820
1400-1500	Voice of the Mediterranean, Malta	11925	
1400-1500	ABC, Katherine, Australia	2485	
1400-1500	ABC, Perth, Australia	9610	
1400-1500	All India Radio, New Delhi	11760	9565
1400-1500	BBC World Service, London, England	5975	6045 6190 6195
		7325	9410 9660 9740



frequency

section

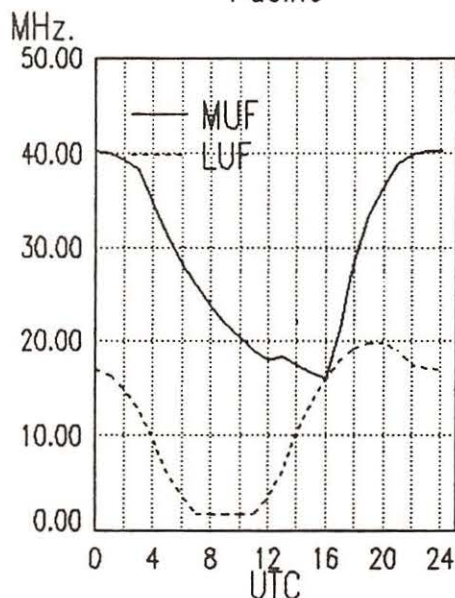
		9750	9760	11750	11940
		12095	15070	15140	15310
		17640	17705	17790	17880
		21470	21660	21710	25750
1400-1500	CBC Northern Quebec Service, Can	9625			
1400-1500	CBN, St. John's, Newfoundland	6160			
1400-1500	M-ACBU, Vancouver, British Columbia	6160			
1400-1500	CFCF, Montreal, Quebec, Canada	6005			
1400-1500	CFCN, Calgary, Alberta, Canada	6030			
1400-1500	CHNS, Halifax, Nova Scotia, Canada	6130			
1400-1500	Christian Science World Service	9530	13760	15385	17555
		21780			
1400-1500	CKWX, Vancouver, British Columbia	6080			
1400-1500	CFRB, Toronto, Ontario	6070			
1400-1500	FEBC Radio Int'l, Philippines	11850			
1400-1500	HCJB, Quito, Ecuador	11740	15115	17890	
1400-1500	KUSW, Salt Lake City, Utah	9850			
1400-1430	Radio Australia, Melbourne	5995	11930	6080	
		7205	9580		
1400-1500	Radio Japan, Tokyo	9505	11815		
1400-1500	Radio Moscow World Service	11840	15475	17810	17700
1405-1430	Radio Finland, Helsinki	15185	9640		
1430-1500	Radio Sofia, Bulgaria	11735	15310	15370	17825
1445-1500	Radio Berlin International, GDR	11970	17880		
1445-1500	RCI European News Serv, Montreal	11935	15315	15325	17820
	{M-A add these:	15305	17795	21545	
1400-1500	Radio RSA, Johannesburg	11925	21535	21590	25790
1400-1500	Voice of America-East Asia Service	6110	9760	15155	15425
1400-1500	Voice of America-South Asia Service	7125	9645	9760	15205
		15395			
1400-1500	Voice of Nigeria, Lagos	7255			
1400-1500	WHRI, Noblesville, Indiana	9465	15105		
1400-1500	S WRNO Worldwide, Louisiana	11965			
1400-1500	WWCR, Nashville, Tennessee	15690			
1400-1500	WYFR, Okeechobee, Florida	5950	9705	11830	13695
		17640			
1405-1500	WYFR, Taiwan	11540			
1415-1500	M-A Radio Bhutan	5023v			
1415-1425	Radio Nepal, Katmandu	5005	7165	(alt. 3230)	
1415-1500	Radio Jordan, Amman	9560			
1430-1500	Voice of Hope, Lebanon	6280			
1430-1500	Radio Australia, Melbourne	11930	9580	7205	6080
		6035	5995		
1430-1500	Voice of Myanmar (Burma)	5990v			
1430-1500	F ABC, Alice Springs, Australia	2310	(ML)		

1430-1500	F ABC, Tennant Creek, Australia	2325	(ML)		
1430-1500	Radio Austria International, Vienna	6155	11780	13730	21490
1430-1500	Radio Netherlands Int'l, Hilversum	5955	13770	15150	17575
		17605			
1430-1500	Radio Prague, Czechoslovakia	11685	13715	15110	15155
		17840	21505		
1445-1500	Vatican Radio, Vatican City	6248	7250	9645	11740

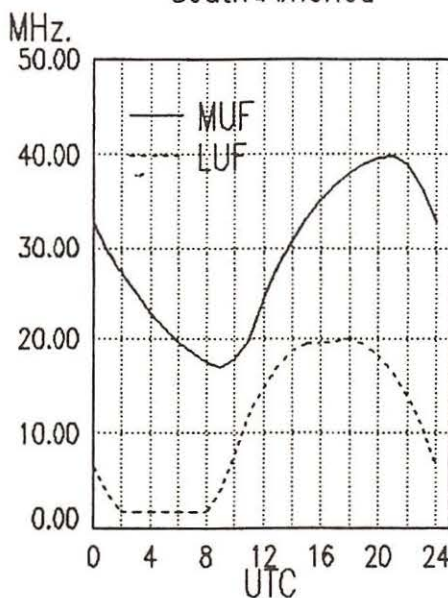
1500 UTC [11:00 AM EDT/8:00 AM PDT]

1500-1515	Vatican Radio, Vatican City	11955	15090	17870	
1500-1515	WYFR, Taiwan	11550			
1500-1525	Radio Netherlands Int'l, Hilversum	5955	13770	15150	17575
		17605			
1500-1530	Radio Sweden, Stockholm	17740	11905		
1500-1530	Radio Bucharest, Romania	15335	11940	15250	17720
		17745			
1500-1550	Radio Pyongyang, North Korea	11750	9977	9640	9325
1500-1600	Radio Jordan, Amman	9560			
1500-1550	Deutsche Welle, Koln, West Germany	9735	11965	17765	21600
		21700			
1500-1555	Radio Beijing, China	7405	11795	15165	
1500-1600	S Radio Canada Int'l, Montreal	11955	17820	11720	
1500-1600	Voice of Hope, Lebanon	6280			
1500-1600	F ABC, Alice Springs, Australia	2310	(ML)		
1500-1600	ABC, Perth, Australia	9610			
1500-1600	F ABC, Tennant Creek, Australia	2325	(ML)		
1500-1600	BBC World Service, London, England	3915	5995	6180	6190
		6195	7180	7325	9410
		9515	9740	9750	9760
		11750	11940	12095	15070
		15260	15310	15400	17640
		17705	17880	21470	21660
		21710	25750	17790	
1500-1600	Voice of Myanmar (Burma)	5990v			
1500-1600	CBC Northern Quebec Service, Can	9625	11720	(ML)	
1500-1600	CBN, St. John's, Newfoundland	6160			
1500-1600	CBU, Vancouver, British Columbia	6160			
1500-1600	CFCF, Montreal, Quebec, Canada	6005			
1500-1600	CFCN, Calgary, Alberta, Canada	6030			
1500-1600	CHNS, Halifax, Nova Scotia, Canada	6130			
1500-1600	Christian Science World Service	9530	13760	15385	17555
		21780			
1500-1600	CKWX, Vancouver, British Columbia	6080			

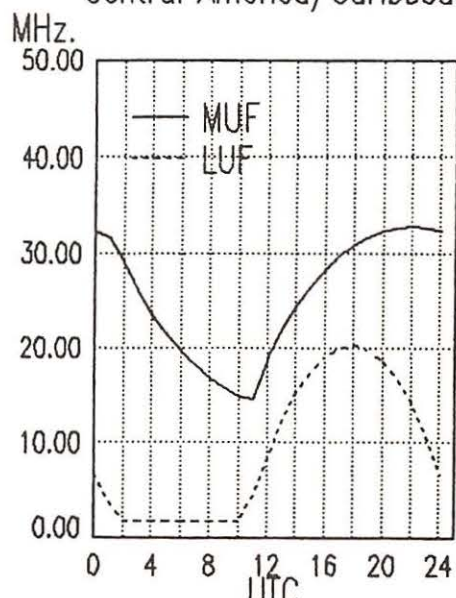
Midwest To
Pacific



Midwest To
South America



Midwest To
Central America/Caribbean



Midwest

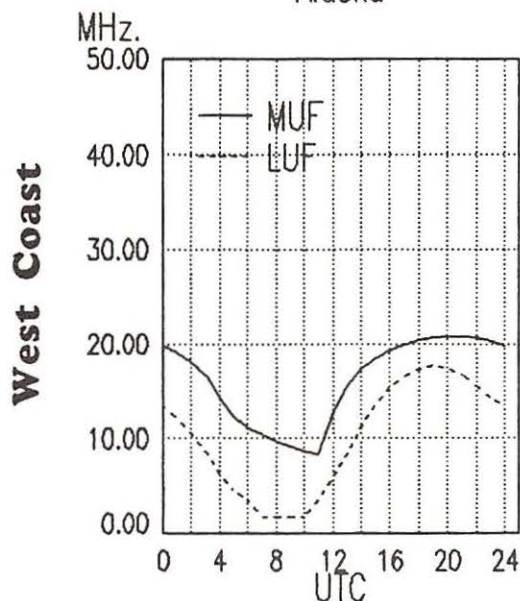
frequency section

1500-1600	CFRB, Toronto, Ontario	6070	
1500-1600	FEBA, Mahe, Seychelles	11865	15325
1500-1600	FEBC Radio Int'l, Philippines	11850	
1500-1600	HCJB, Quito, Ecuador	15115	17890
1500-1600	T-S KNLS, Anchor Point, Alaska	7355	
1500-1600	KTWR, Agana, Guam	11650	
1500-1600	KUSW, Salt Lake City, Utah	15650	
1500-1600	Radio Australia, Melbourne	5995	6035 15425 6080
		11930	7215 9580
1500-1600	M-F Radiodiffusion Nationale du Burundi	6140	
1500-1600	Radio Japan, Tokyo	9505	11815 21700
1500-1525	Radio Finland, Helsinki	15400	21550
1500-1530	Radio Sofia, Bulgaria	11735	15310 15370 17825
1500-1600	Radio Korea, Seoul	5975	
1500-1600	Radio Moscow World Service	11840	15475 17810 17700
1515-1530	Radio Budapest, Hungary	15160	15220 11910 9835
		9585	7220
1525-1545	A-S Radio Finland, Helsinki	15400	21550
1530-1555	M-A BRT Brussels, Belgium	17580	21810
1545-1600	Radio Berlin International, GDR	7295	9730 15350 17780
1545-1600	S Radio Finland, Helsinki	15400	21550
1500-1600	Radio RSA, Johannesburg S. Africa	11925	21535 21590 25790
1500-1600	Voice of America-Middle East Service	9700	15205 15260
1500-1600	Voice of America-South Asia Service	6110	7125 9645 9700
		9760	15205 15260 15395
		7255	
1500-1600	Voice of Nigeria, Lagos	15105	21840
1500-1600	WHRI, Noblesville, Indiana	11965	
1500-1600	S WRNO Worldwide, Louisiana	11965	
1500-1600	WWCR, Nashville, Tennessee	15690	
1500-1600	WYFR, Okeechobee, Florida	5950	11830 13695 15215
		17640	
1515-1530	KTWR, Agana, Guam	11650	
1530-1540	M-A Voice of Greece, Athens	11645	15630 17535
1530-1600	Radio Prague, Czechoslovakia	11990	13715 17840 21505
		15155	15110 11685 7345
		5930	17640
1530-1600	Radio Omdurman, Sudan	11635	9550/9540
1530-1600	Radio Sweden, Stockholm	17880	21610 21655
1530-1600	Swiss Radio International, Berne	3985	13685 17830 21630
1545-1600	BBC English by Radio, London	9635	11945
1545-1600	Radio Pakistan	21740	21480 17895 17580
		15605	13665
1545-1600	Vatican Radio, Vatican City	15120	17730 21650

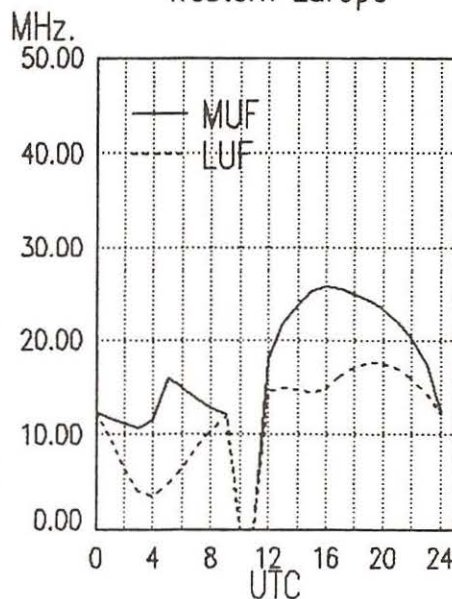
1600 UTC [12:00 PM EDT/9:00 AM PDT]

1600-1610	FEBA, Mahe, Seychelles	11865	15325
1600-1610	Vatican Radio, Vatican City	6248	7250 9645 11740
1600-1615	BBC World Service, London, England	3915	5975 5995 6180
		6190	6195 7180 7325
		9410	9515 9740 9750
		9760	11750 11940 12095
		15070	15260 15310 15400
		17640	17705 17860 17880
		21470	21660 21710 25750
1600-1625	Radio Prague, Czechoslovakia	21505	17840 17640 15155
		15110	13715 11990 11685
		7345	5930
1600-1630	Radio Deutsche Welle, Koln	21680	17825 15595 15105
		7225	6170
1600-1630	Radio Pakistan, Dacca	17580	13665 15605 21740
		17895	21480
1600-1630	S Radio Norway International, Oslo	17765	21705
1600-1630	Radio Polonia, Warsaw, Poland	6135	9540
1600-1630	Radio Portugal, Lisbon	15210	
1600-1630	Voice of Vietnam, Hanoi	9840	15010 12010
1600-1640	UAE Radio, Dubai	11790	15320 21605 15300
1600-1650	Radio Pyongyang, North Korea	9325	11760
1600-1700	F ABC, Alice Springs, Australia	2310	(ML)
1600-1700	ABC, Perth, Australia	9610	
1600-1700	F ABC, Tennant Creek, Australia	2325	(ML)
1600-1700	Adventist World Radio-Asia, Guam	11980	13720
1600-1700	CBC Northern Quebec Service, Can	9625	(ML)
1600-1700	CBN, St. John's, Newfoundland	6160	
1600-1630	Radio Berlin International, GDR	17780	15350 9730 7295
1600-1700	Radio Moscow World Service	11840	15475 17810 17700
1630-1700	Radio Sta. Peace & Progress, Moscow	15320	11850 11980 17565
		12065	11910 15585 9705
		11695	5910
1630-1655	BRT Brussels, Belgium	11980	
1600-1700	KSDA, Guam	11980	
1600-1700	CBU, Vancouver, British Columbia	6160	
1600-1700	CFCF, Montreal, Quebec, Canada	6005	
1600-1700	CFCN, Calgary, Alberta, Canada	6030	
1600-1700	CHNS, Halifax, Nova Scotia, Canada	6130	
1600-1700	Christian Science World Service	15385	21640
1600-1700	CKWX, Vancouver, British Columbia	6080	
1600-1700	CFRB, Toronto, Ontario	6070	
1600-1700	HCJB, Quito, Ecuador	15115	17890

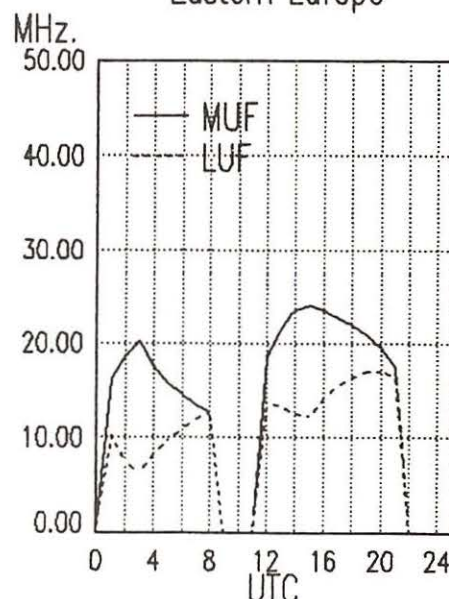
Midwest To
Alaska



West Coast To
Western Europe



West Coast To
Eastern Europe



frequency

section

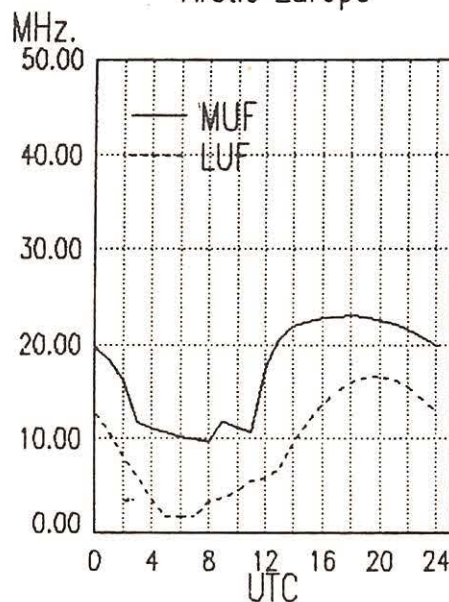
1600-1700	KTWR, Agana, Guam	11650	11910	13720	
1600-1700	KUSW, Salt Lake City, Utah	15650			
1600-1700	Radio Australia, Melbourne	11930	6035	6020	6080
		7205	7215	9580	15245
1600-1700	Radio Beijing, China	9570	15110	15130	
1600-1700	Radio France International, Paris	6175	11705	12015	15360
		17620	17795	17850	
1600-1700	Radio Jordan, Amman	9560			
1600-1700	Radio Korea, Seoul, South Korea	5975			
1600-1700	Trans World Radio via Nairobi, Kenya	11910			
1600-1700	Trans World Radio-Swaziland	15210			
1600-1700	Voice of America-Africa Service	7195	9575	11920	15410
		15445	15580	15600	17785
		17800	17870		
1600-1700	Voice of America-Middle East Service	3980	9700	15205	15260
1600-1700	Voice of America-Asia Service	7125	9645	9700	9760
		15205	15260	15395	
1600-1700	Voice of Nigeria, Lagos	7255			
1600-1700	WHRI, Noblesville, Indiana	15105	21840		
1600-1700	WINB, Red Lion, Pennsylvania	15295			
1600-1700	WRNO New Orleans, Louisiana	15420			
1600-1700	WWCR, Nashville, Tennessee	15690			
1600-1700	WYFR, Okeechobee, Florida	11830	13695	15215	15566
		17612	21525	21615	17640
1600-1650	Deutsche Welle, Koln, West Germany	6170	7225	15105	15595
		17825	21680		
1615-1620	Vatican Radio, Vatican City	9645	11740		
1615-1630	BBC Africa Service, London	6005	6190	9595	11940
		15400	17880		
1615-1630	BBC English by Radio, London	3975	6125	9750	
1615-1700	BBC World Service, London, England	3915	5975	6180	6195
		7325	9410	9740	11775
		12095	15070	15260	15310
		17640	17695	17860	21470
		21660	21710	9515	
1630-1700	Radio Netherlands Int'l, Hilversum	15375	15570		
1630-1700	RAE, Buenos Aires, Argentina	11710	15345		

1700 UTC [1:00 PM EDT/10:00 AM PDT]

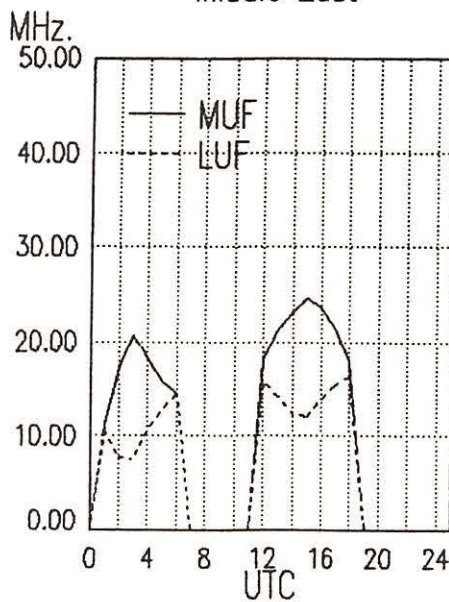
1700-1705	KTWR, Agana, Guam	11650			
1700-1715	BBC English by Radio, London	6065	7105	9605	11750
1700-1715	Swiss Radio Intl Europe Service(MO)	3985	6165	9535	
1700-1715	Kol Israel, Jerusalem	11585	11655		

1700-1800	A,S Radio Canada Int'l, Sackville, NB	13670	17820	15260	
1700-1800	Radio Korea, Seoul	15575			
1700-1800	Radio Moscow World Service	11840	15475	17810	17700
1700-1725	Radio Netherlands Int'l, Hilversum	15375	15570		
1700-1730	BBC English by Radio, London	3975	6125	7155	
1700-1730	S Radio Norway International, Oslo	15305	21705		
1700-1730	RAE, Buenos Aires, Argentina	11710	15345		
1700-1745	BBC World Service, London, England	3915	5975	6180	6195
		7160	7325	9410	9515
		9740	12095	15070	15260
		15310	17640	17695	21470
		21660	21710		
1700-1750	Radio Pyongyang, North Korea	11750	9977	9640	9325
1700-1800	F ABC, Alice Springs, Australia	2310	(ML)		
1700-1800	ABC, Tennant Creek, Australia	2325	(ML)		
1700-1800	CBN, St. John's, Newfoundland	6160			
1700-1800	CBU, Vancouver, British Columbia	6160			
1700-1800	CFCF, Montreal, Quebec, Canada	6005			
1700-1800	CFCN, Calgary, Alberta, Canada	6030			
1700-1800	Radio New Zealand, Wellington	17680			
1700-1800	CHNS, Halifax, Nova Scotia, Canada	6130			
1700-1800	Christian Science World Service	15385	21640		
1700-1800	CKWX, Vancouver, British Columbia	6080			
1700-1800	CFRB, Toronto, Ontario	6070			
1700-1800	S-F WMLK Bethel, Pennsylvania	9465			
1700-1800	KUSW, Salt Lake City, Utah	15650			
1700-1800	Radio Australia, Melbourne	11930	6035	6020	6080
		7205	7215	9580	15245
		9500	9570	11575	
1700-1800	Radio Beijing, China	7140	9505	9535	11815
1700-1800	Radio Japan, Tokyo	9560			
1700-1800	Radio Jordan, Amman	9560			
1700-1800	Voice of America-Africa Service	7195	9575	11920	15410
		15445	15580	15600	17785
		17800	17870		
1700-1800	Voice of America-Middle East Serv	3980	6040	9700	9760
		11760	15205	15260	
1700-1800	Voice of America-South Asia Serv	7125	9645	9700	15395
1700-1800	WHRI, Noblesville, Indiana	13760	15105		
1700-1800	WINB, Red Lion, Pennsylvania	15295			
1700-1800	WRNO, New Orleans, Louisiana	15420			
1700-1800	WWCR, Nashville, Tennessee	15690			
1700-1800	WYFR, Okeechobee, Florida	11830	13695	15215	
		17750	17885		
1709-1730	BBC Africa Service, London, England	6005	6190	9595	11940
		15400	17880		

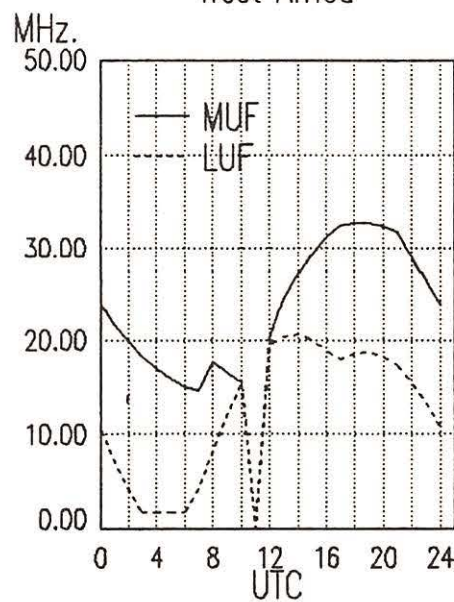
West Coast To
Arctic Europe



West Coast To
Middle East



West Coast To
West Africa



West Coast

frequency

section

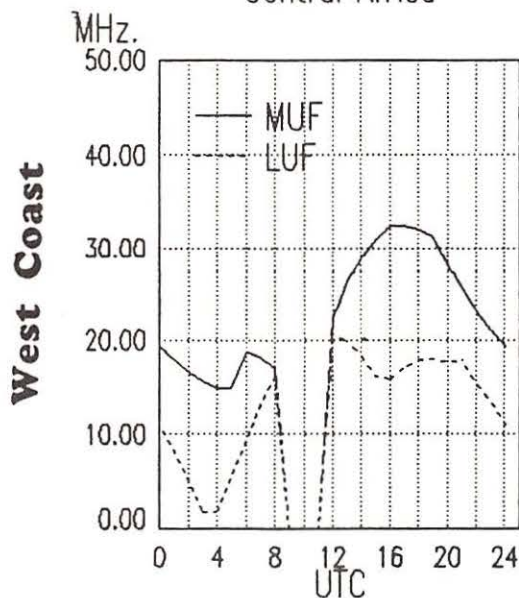
1715-1800	Radio Pakistan	11570	9815
1730-1740	Radio Bayrak, Northern Cyprus	6150	
1730-1755	BRT Brussels, Belgium	5910	11695 13675
1730-1800	Radio Sofia, Bulgaria	11735	11840 15370
1730-1800	Radio Berlin International, GDR	9665 13610 15145 15350	
		17755	
1730-1800	Radio Austria International, Vienna	5945	6155 12010 13730
1730-1800	Radio Bucharest, Romania	15340	15365 17720 11940
1730-1800	Radio Prague, Czechoslovakia	9605	11685 11990 13715
		15110 17840 21505	
1745-1800	BBC World Service, London, England	5975 6180 6195 7160	
		7325 9410 9740 12095	
		15070 15310 15400 17640	
		17695 17880	

1800 UTC [2:00 PM EDT/11:00 AM PDT]

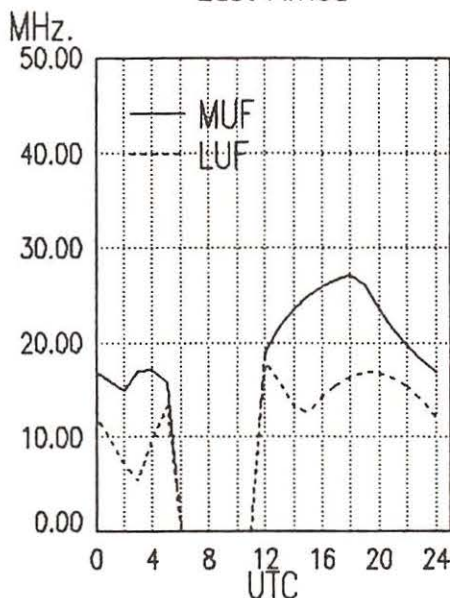
1800-1815	Radio Berlin International, GDR	17755	15350 15145 13610
		9665	
1800-1830	Radio Budapest, Hungary	15160	11910 9835 9585
		7220	6110
1800-1830 S-F	Radio Canada Int'l, Montreal	13670	15260 17820
1800-1830	Radio Kiev, The Ukraine	6010	6090 6165 7115
1800-1830	BBC World Service, London	3255	3955 5975 6180
		6190	6195 7160 7325
		9410	9740 11750 12095
		15070	15310 15400 17640
		17695	17880
1800-1830 S	Radio Norway International, Oslo	15310	
1800-1830	Voice of Ethiopia, Addis Ababa	9660	
1800-1830	Radio Sweden, Stockholm	6065	7265
1800-1830	Radio Prague, Czechoslovakia	7345	5930
1800-1825	Radio Prague, Czechoslovakia	21505	17840 15110 13715
		11990	11685 9605
		12020	15010 9840
1800-1830	Voice of Vietnam, Hanoi	15210	
1800-1845	Trans World Radio, Swaziland	15265	
1800-1850	Radio Bras, Brasilia, Brasil	9618	4855 3265
1800-1855	Radio Mozambique, Maputo	2310	(ML)
1800-1900 F	ABC, Alice Springs, Australia	2325	(ML)
1800-1900 F	ABC, Tennant Creek, Australia	11840	9875 9860 9685
1800-1900	Radio Moscow World Service	17730	17680a 15485a
1800-1900	Radio New Zealand, Wellington	11935	15360
1800-1845	All India Radio, New Delhi	6160	
1800-1900	CBN, St. John's, Newfoundland		

1800-1900	CBU, Vancouver, British Columbia	6160	
1800-1900	CFCF, Montreal, Quebec, Canada	6005	
1800-1900	CFCN, Calgary, Alberta, Canada	6030	
1800-1900	CHNS, Halifax, Nova Scotia, Canada	6130	
1800-1900	Christian Science World Service	9455	17770 21640
1800-1900	CKWX, Vancouver, British Columbia	6080	
1800-1900	CFRB, Toronto, Ontario	6070	
1800-1900	KUSW, Salt Lake City, Utah	15650	
1800-1830	Radio Australia, Melbourne	11930	6035 6020 6080
		7205	7215 9580 15245
		9560	
1800-1900	Radio Jordan, Amman	13610	
1800-1900	Radio Kuwait, Safat, Kuwait	9625	
1800-1900	CBC Montreal	15010	12010 9840
1800-1830	Voice of Vietnam, Hanoi	9465	
1800-1900 S-F	WMLK Bethel, Pennsylvania	21535	15230 7230
1800-1900	Radio RSA, Johannesburg, S. Africa	13660	21566
1800-1900 A.S	Radio for Peace Int'l, Costa Rica	7195	9575 11920 15410
1800-1900	Voice of America-Africa Service	15445	15580 15600 17785
		17800	17870 21585
		6040	9700 9760 11760
		15205	
1800-1900	WHRI, Noblesville, Indiana	13760	17830
1800-1900	WINB, Red Lion, Pennsylvania	15295	
1800-1900	WRNO, New Orleans, Louisiana	15420	
1800-1900	WWCR, Nashville, Tennessee	15690	
1800-1900	WYFR, Okeechobee, Florida	11830	13695 15215 17750
		17885	
1815-1900	Radio Bangladesh, Dhaka	15255	11705
1830-1845	Radio Finland, Helsinki	11755	9530 6120
1830-1900	Radio Budapest, Hungary	6110	7220 9585 9835
		11910	15160
1830-1900	Radio Yugoslavia, Belgrade	11735	7215 5980
1830-1855	Radio Polonia, Warsaw, Poland	5995	6135 7125 7285
		9525	11840
1830-1900	Radio Riyadh, Saudi Arabia	9705	9720
1830-1900	Radio Australia, Melbourne	11930	9580 7215 7205
		6080	6035 6020 5995
1830-1900 A.S	Radio Canada Int'l, Montreal	13670	15260 17820
1830-1900 M-F	Radio Canada Int'l, Montreal	21675	17875 15325 7235
		5995	
1830-1900	Radio Afghanistan, Kabul	9635	7215 6020
1830-1900	Radio Tirana, Albania	7120	9480
1830-1900	BBC Africa Service, London	3255	6005 6190 9630
		15400	17880

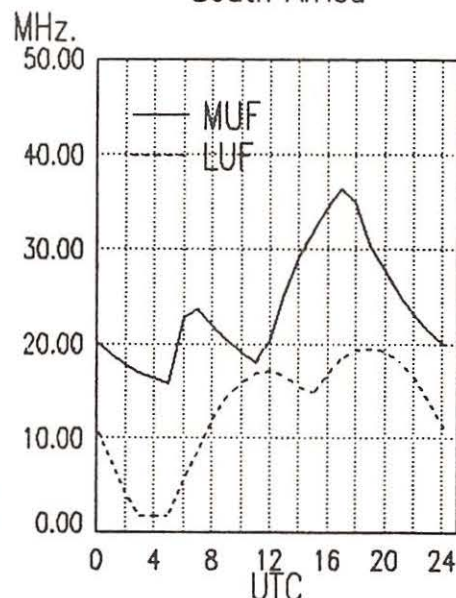
West Coast To
Central Africa



West Coast To
East Africa



West Coast To
South Africa



frequency

section

1830-1900	BBC World Service, London, England	3955	6180	6195	7325
		9410	11750	12095	15070
		17755			
1830-1900	Radio Netherlands Int'l, Hilversum	6020	15560	17605	21685
1830-1900	Swiss Radio International, Berne	9885	11955		
1830-1900	Swiss Radio Int'l European Service	3985	6165	9535	
1840-1850	M-A Voice of Greece, Athens	11645	12105	15630	
1845-1855	IRR RTV Guineenne, Conakry, Guinea	4702	7125v		
1845-1900	GBC Radio, Accra, Ghana	6130			
1845-1900	All India Radio, New Delhi	15360	11935	11620	9550
		7412			
1850-1855	Africa No. 1, Gabon	15475			

1900 UTC [3:00 PM EDT/12:00 PM PDT]

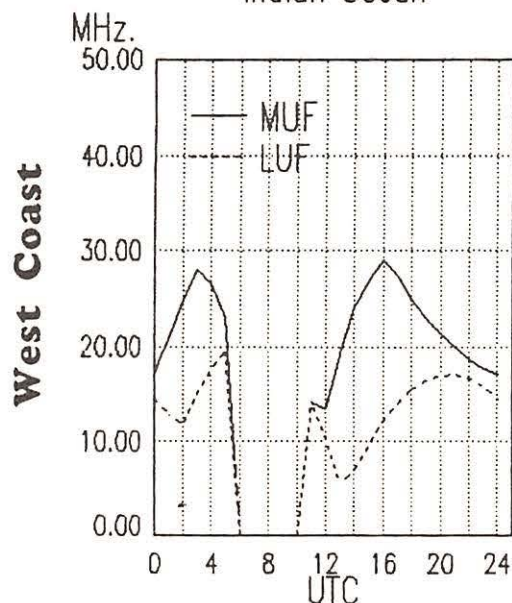
1900-1925	Radio Netherlands Int'l, Hilversum	6020	15560	17605	21685
1900-1930	Radio Afghanistan, Kabul	9635	7215	6020	
1900-1945	Radio Omdurman, Sudan	11635			
1900-1930	Kol Israel, Jerusalem	11605	15640	17590	
1900-1930	M-F Radio Canada Int'l, Montreal	13670	15260	17820	
1900-1930	Radio Japan, Tokyo	9505	11850	15270	
1900-1930	S Radio Norway International, Oslo	15220			
1900-1930	M-F Radio Portugal, Lisbon	11740	15250	21530	
1900-1930	Voice of Vietnam, Hanoi	9840	15010	12010	
1900-1950	Deutsche Welle, Koln, West Germany	11785	11810	13790	15390
		17810			
1900-2000	CBC, Montreal	9625			
1900-2000	Radio New Zealand, Wellington	17730	17680a	15485a	
1900-2000	Radio Moscow British Service	9685			
1900-2000	Radio Moscow World Service		11840	9860	12050
1900-1945	All India Radio, New Delhi	7412	11620	11935	15360
		9550			
1900-2000	BBC World Service, London, England	3255	3955	6005	6180
		6190	6195	7160	7325
		9410	9630	11750	12095
		15070	15140	15400	17880
1900-2000	CBN, St. John's, Newfoundland	6160			
1900-2000	CBU, Vancouver, British Columbia	6160			
1900-2000	CFCF, Montreal, Quebec, Canada	6005			
1900-2000	CFCN, Calgary, Alberta, Canada	6030			
1900-2000	CHNS, Halifax, Nova Scotia, Canada	6130			
1900-2000	Christian Science World Service	9455	17770	21640	
1900-2000	CKWX, Vancouver, British Columbia	6080			
1900-2000	CFRB, Toronto, Ontario	6070			

1900-2000	GBC Radio, Accra, Ghana	6130			
1900-2000	HJCB European Service, Ecuador	17790	15270	21470	
1900-2000	KUSW, Salt Lake City, Utah	15650			
1900-2000	Radio Algiers, Alger	9535	15215		
1900-2000	Radio Australia, Melbourne	6035	11930	6080	7205
		7215	9580	6020	
		6955	9440		
1900-2000	Radio Beijing, China	11800			
1900-2000	Radio Havana Cuba	9560			
1900-2000	Radio Jordan, Amman	13610			
1900-2000	Radio Kuwait, Safat, Kuwait	13660	21566		
1900-2000	A,S Radio for Peace Int'l, Costa Rica	15230	17765		
1900-2000	Radio RSA, Johannesburg, S. Africa	15280	15375	15395	
1900-2000	Spanish National Radio, Madrid	7345	5930		
1900-2000	Radio Prague, Czechoslovakia	7195	15410	15445	15580
1900-2000	Voice of America-Africa Service	15600	17785	17800	17870
		21485			
1900-2000	Voice of America-Middle East Serv	6040	9700	9760	11760
		15205			
1900-2000	Voice of America-Pacific Service	9525	11870	15180	
1900-2000	WHRI, Noblesville, Indiana	13760	17830		
1900-2000	WINB, Red Lion, Pennsylvania	15295			
1900-2000	S-F WMLK, Bethel, Pennsylvania	9465			
1900-2000	WRNO, New Orleans, Louisiana	15420			
1900-2000	WWCR, Nashville, Tennessee	15690			
1900-2000	WYFR, Okeechobee, Florida	11830	13695	15215	15566
		17885	21615		
1915-2000	Radio Berlin International, GDR	15350	13610	9665	
1930-2000	Radio Korea, Seoul	15575	7550	6480	
1930-2000	M Radio Tallin, Estonia	5925			
1945-2000	Radio Berlin International, GDR	6115			
1920-1930	M-A Voice of Greece, Athens	7430	9395	9425	
1930-2000	Radio Austria International, Vienna	5945	6155	12010	13730
1930-2000	Radio Bucharest, Romania	9690	7195	6105	7105
1930-2000	Voice of the Islamic Republic Iran	9022	11895		
1935-1955	RAI, Rome, Italy	7275	9710	11800	
1945-2000	All India Radio, New Delhi	15360	11935	9550	
1950-2000	Radio Omdurman, Sudan	11635			

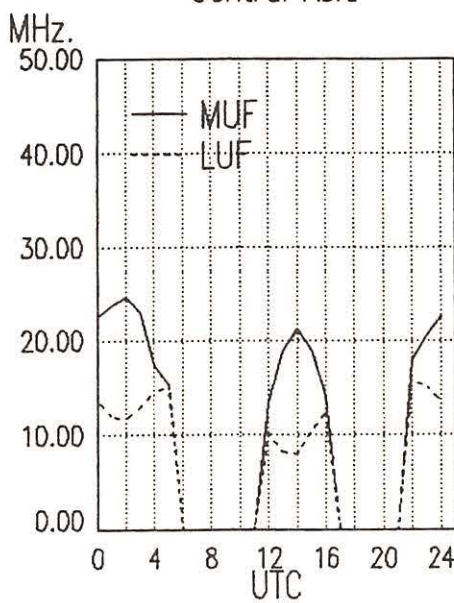
2000 UTC [4:00 PM EDT/1:00 PM PDT]

2005-2100	Radio New Zealand, Wellington	17730	15485a	9850a
2000-2005	Vatican Radio, Vatican City	7250	9645	

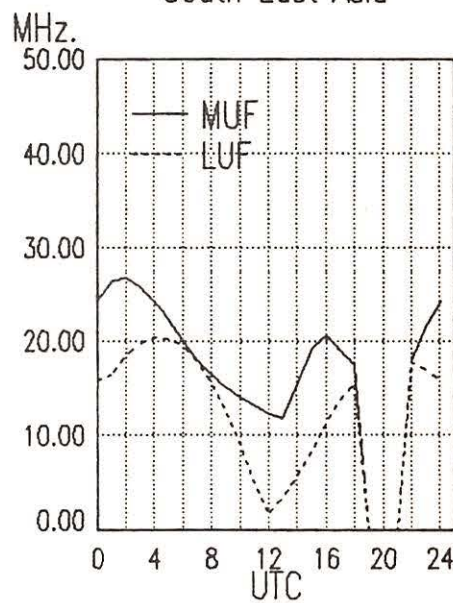
West Coast To
Indian Ocean



West Coast To
Central Asia



West Coast To
South East Asia



frequency

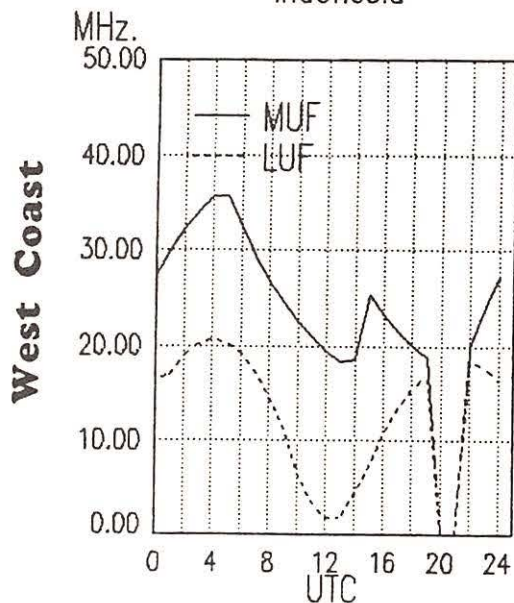
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2000-2030	BBC World Service, London, England	3255	3955	5975	6005	2000-2100	WHRI, Noblesville, Indiana	13760	17830
		6180	6190	6195	7160	2000-2100	WINB, Red Lion, Pennsylvania	15185	
		7180	7325	9410	9630	2000-2100	WRNO, New Orleans, Louisiana	15420	
		11715	11750	12095	15070	2000-2100	WVCR, Nashville, Tennessee	15690	
		15140	15260	15400	17760	2000-2100	WYFR, Okeechobee, Florida	9455	11830 13695 15215
		17880						15566	17612 17845
2000-2030	Radio Bucharest, Romania	9690	7105	7105	6105			21525	
2000-2030	Voice of the Islamic Republic Iran	9022	11895			2005-2100	Radio Damascus, Syria	9950	12085
2000-2050	Radio Pyongyang, North Korea	6576	9345	9977	9640	2025-2045	RAI, Rome, Italy	7235	9575 11800
2000-2100	Radio for Peace Int'l, Costa Rica	21566	13660			2030-2100	BBC World Service, London, England	3955	5975 6005 6180
2000-2100	Voice of Hope, Lebanon	6280						6195	7180 7325 9410
2000-2100	All India Radio, New Delhi	9950	11860	15360				11715	11750 12095 15070
2000-2100	M-AABC, Alice Springs, Australia	2310	(ML)					15140	15260 15400 17760
2000-2100	ABC, Katherine, Australia	2485						17880	
2000-2100	M-AABC, Tennant Creek, Australia	2325	(ML)			2030-2100	Radio Australia, Melbourne	9620	6020
2000-2100	CBN, St. John's, Newfoundland	6160				2030-2100	Radio Sofia, Bulgaria	11660	15330 9700
2000-2100	CBU, Vancouver, British Columbia	6160				2045-2100	Radio Berlin International, GDR	6115	
2000-2100	CFCF, Montreal, Quebec, Canada	6005				2030-2100	Radio Africa, Equatorial Guinea	7190	
2000-2030	Radio Berlin International, GDR	6115	9665	13610	15340	2030-2100	Radio Netherlands Int'l, Hilversum	9860	13700 15560
2000-2030	M Radio Ljubljana, Yugoslavia	5980	7240	9620		2030-2100	M Radio Tallin, Estonia	5925	
2000-2100	Rdaio New Zealand, Wellington	17680				2030-2100	Voice of Vietnam, Hanoi	12020	15010 9840
2000-2100	Radio Moscow World Service	9685	9860	9870	11840	2040-2048	M-A Voice of Greece, Athens	9425	11645 9395
2000-2100	Voice of Turkey, Ankara	9795				2045-2100	All India Radio, New Delhi	7412	9550 9910 11620
2000-2030	Radio Budapest, Hungary	11910	15160	9835	9585			11715	7265
		7220	6110			2045-2100	IBRA Radio, Malta	7110	7225
2000-2030	Radio Korea, Seoul	15575	7550	6480		2045-2100	Vatican Radio, Vatican City	9625	11700 11760 15120
2000-2100	CFCN, Calgary, Alberta, Canada	6030				2050-2100	Vatican Radio, Vatican City	6190	7250 9645
2000-2100	CHNS, Halifax, Nova Scotia, Canada	6130							
2000-2100	Christian Science World Service	9455	13770	15610	17555				
		17770							
2000-2100	CKWX, Vancouver, British Columbia	6080							
2000-2100	CFRB, Toronto, Ontario	6070							
2000-2100	KUSW, Salt Lake City, Utah	15590							
2000-2030	Radio Australia, Melbourne	6035	7205	7215	9580				
		9620	6020						
2000-2100	Radio Beijing, China	6920	9440	9920	11715				
		15110							
2000-2100	Radio Havana Cuba	11800							
2000-2100	Radio Kuwait, Safat, Kuwait	13610							
2000-2100	Radio Jordan, Amman	9560							
2000-2100	Voice of America-Africa Service	7195	15410	15445	15580				
		15600	17785	17800	17870				
		21485							
2000-2100	Voice of America-Middle East Serv	6040	9700	9760	11760				
		15205							

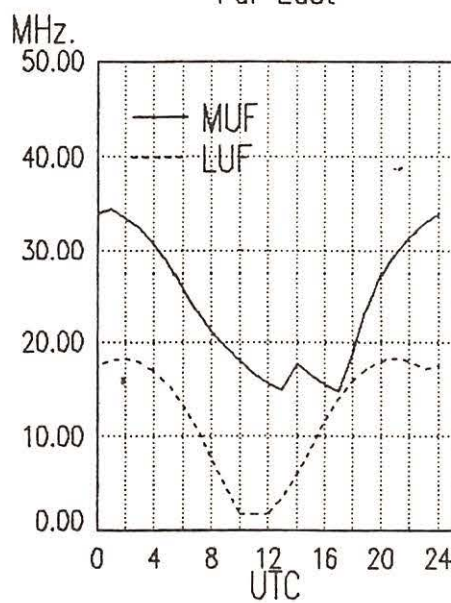
2100 UTC [5:00 PM EDT/2:00 PM PDT]

2100-2105	Radio Damascus, Syria	9950	12085		
2100-2110	Vatican Radio, Vatican City	6190	7250	9645	
2100-2115	BBC World Service, London, England	3955	5975	6005	6180
		6195	7325	9410	11750
		12095	15070	15140	15260
		15400	17715	17760	17880
2100-2115	IBRA Radio, Malta	7225			
2100-2130	Radio Beijing, China	11715	15110		
2100-2125	Radio Netherlands Int'l, Hilversum	9860	13700	15560	
2100-2130	Radio Bucharest, Romania	9690	7195	7105	6105
		5990			
2100-2130	BRT Brussels, Belgium	5910	9925		
2100-2130	Radio Finland, Helsinki	6120			
2100-2145	Radio Berlin International, GDR	9730			

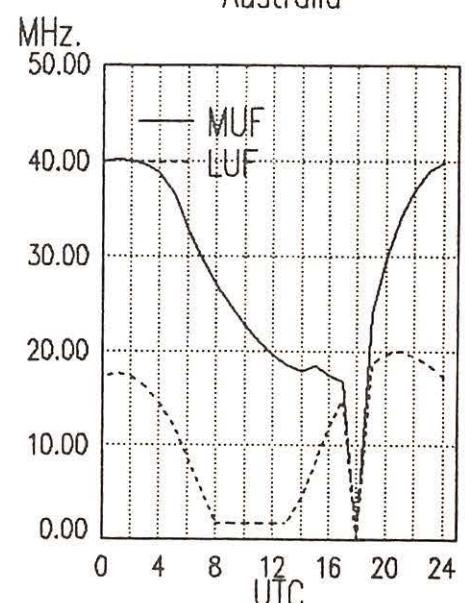
West Coast To
Indonesia



West Coast To
Far East



West Coast To
Australia



frequency

section

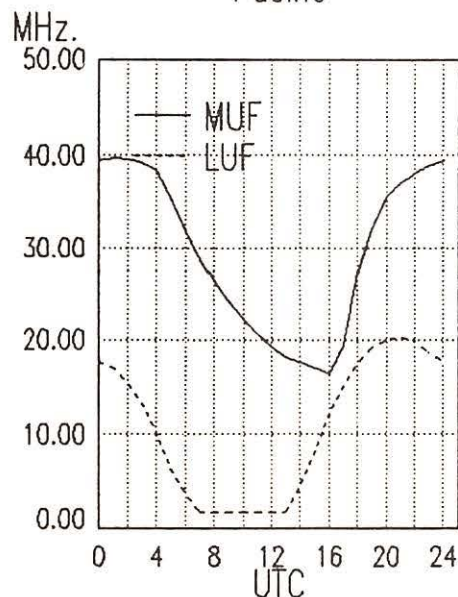
2100-2145	Radio Yugoslavia, Belgrade	11735	9660	9620	7215
2100-2200	Radio Canada Int'l, Montreal	15325	17875		
2100-2200	All India Radio, New Delhi	11715	11620	9910	9550
		7412	7265		
2100-2200	Radio New Zealand, Wellington	17730	15485a	9850a	
2100-2200	Radio Moscow World Service	9685	9860	9870	11840
2100-2130	Radio Japan, Tokyo	7140	11815	11835	15230
		15270	17890		
2100-2130	Radio Sweden, Stockholm	9655	11705		
2100-2130	Swiss Radio International, Berne	9885	13635	15525	21705
2100-2150	Deutsche Welle, Koln, West Germany	9670	11785	9765	13780
2100-2200	CBN, St. John's, Newfoundland	6160			
2100-2200	CBU, Vancouver, British Columbia	6160			
2100-2200	Voice of Hope, Lebanon	6280			
2100-2200	CFCF, Montreal, Quebec, Canada	6005			
2100-2200	CFCN, Calgary, Alberta, Canada	6030			
2100-2200	CHNS, Halifax, Nova Scotia, Canada	6130			
2100-2200	Christian Science World Service	9455	13770	15610	17555
		17770			
2100-2200	CKWX, Vancouver, British Columbia	6080			
2100-2200	CFRB, Toronto, Ontario	6070			
2100-2200	KUSW, Salt Lake City, Utah	15590			
2100-2200	Radio Australia, Melbourne	17795	9620	15160	
2100-2200	Radio Baghdad, Iraq	7290			
2100-2200	Radio Beijing, China	6920	9920	11500	11715
2100-2200	Radio Jordan, Amman	9560			
2100-2200	Radio for Peace, Costa Rica	21566	13660		
2100-2200	RAE, Buenos Aires, Argentina	11710	15345		
2100-2200	Voice of America-Africa Service	7195	15410	15445	15580
		15600	17785	17800	17870
		21485			
2100-2200	Voice of America-Middle East Serv	6040	9700	9760	11760
		15205	11710		
2100-2200	Voice of America-Pacific Service	11870	15185	17735	
2100-2200	WHRI, Noblesville, Indiana	13760	17830		
2100-2200	WINB, Red Lion, Pennsylvania	15185			
2100-2200	WRNO Worldwide, Louisiana	15420			
2100-2200	WWCR, Nashville, Tennessee	15690			
2100-2200	WYFR, Okeechobee, Florida	9455	11830	13695	15215
		15566	17612	17845	
		21525			
2110-2200	Radio Damascus, Syria	15095	12085		
2115-2130	M-F BBC Caribbean Service, London	5975	15400	17715	

2115-2130	BBC World Service, London, England	3955	6005	6195	7180
		7325	9410	11715	11750
		12095	15140	15260	
2130-2200	BBC World Service, London, England	3955	5975	6005	6195
		7325	9410	11750	12095
		15140	15260		
2130-2145	BBC English by Radio, London	11945	15280		
2130-2200	Kol Israel, Jerusalem	11605	15640	17575	
2130-2200	Radio Sofia, Bulgaria	15330	11680		
2145-2200	Radio Berlin International, GDR	5965	9730	13690	
2130-2200	Radio Canada Int'l, Montreal	11880	15150	17820	
2130-2200	BBC English by Radio, London	6125	7125	9635	
2130-2200 T-F	BBC Falkland Islands Service, London	9915			
2130-2200	HCJB, Quito, Ecuador	15270	17790		

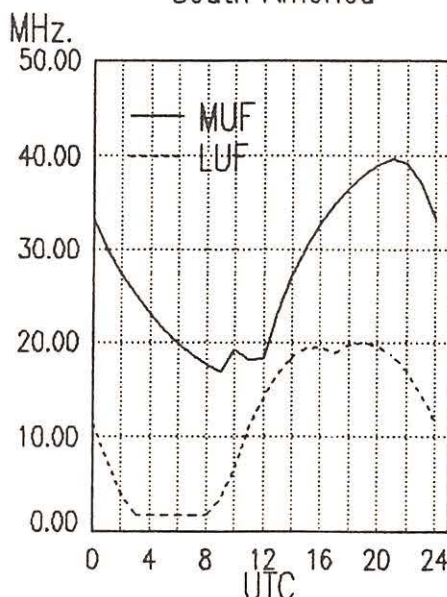
2200 UTC [6:00 PM EDT/3:00 PM PDT]

2200-2205	Radio Damascus, Syria	15095	12085		
2200-2215	M-AABC, Alice Springs, Australia	2310	(ML)		
2200-2215	ABC, Tennant Creek, Australia	2325	(ML)		
2200-2215	BBC English by Radio, London	11945	15280		
2200-2215	M-F Voice of America-Caribbean Service	9640	11880	15225	
2200-2225	RAI, Rome, Italy	5990	7235	9710	
2200-2230	Radio Prague, Czechoslovakia	6055			
2200-2230	ABC, Katherine, Australia	2485			
2200-2245	All India Radio, New Delhi	7412	9550	9910	11620
		11715	7265		
2200-2230	S KGEI, San Francisco, California	15280			
2200-2230	S Radio Norway International, Oslo	15225			
2200-2250	Radio Baghdad, Iraq	7290			
2200-2300	BBC World Service, London, England	3915	3955	5975	6005
		6175	6195	7325	9410
		9570	9590	9595	9915
		11750	11955	12095	15140
		15260	15400		
2200-2300	CBC Northern Quebec Service, Can	9625			
2200-2300	CBN, St. John's, Newfoundland	6160			
2200-2230	Radio Berlin International, GDR	5965	9730	13690	
2200-2230	Radio Vilnius, Lithuania	7400	6100	9765	15180
		17665	17690		
2200-2230	Radio Sofia, Bulgaria	15330	11680		
2200-2300	Radio Korea, Seoul	15575			
2200-2300	Radio Moscow North American Serv	6045	7115	7150	9685
		12050	15425	17700	17720

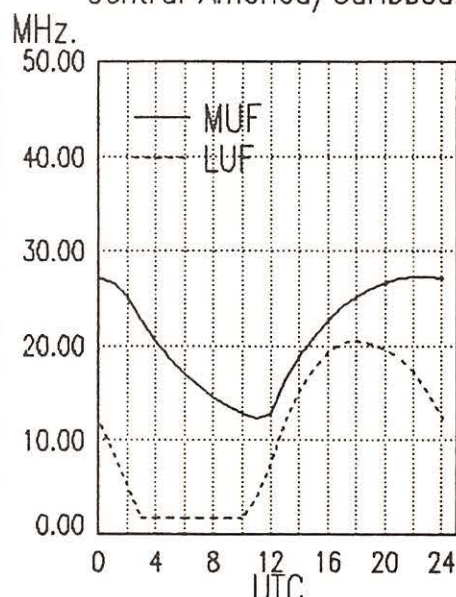
West Coast To
Pacific



West Coast To
South America



West Coast To
Central America/Caribbean



West Coast

frequency

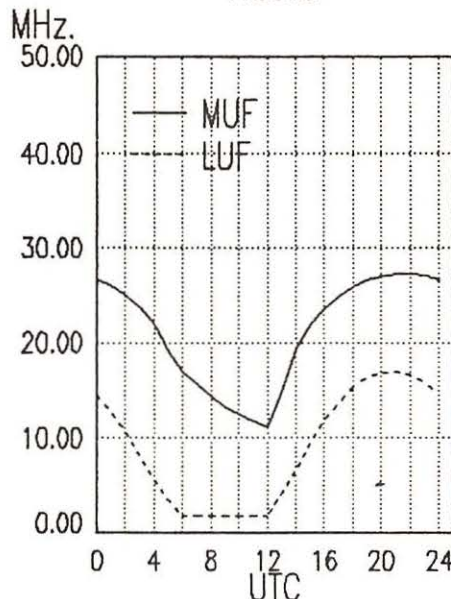
section

2200-2300	Radio Moscow World Service	21790	21690	17655	15420
2200-2300	Voice of Turkey, Ankara	17880	9445	9665	9685
2200-2230	Radio Canada Int'l, Montreal	11705	11905	9755	5960
2200-2300	CBU, Vancouver, British Columbia	6160			
2200-2300	CFCF, Montreal, Quebec, Canada	6005			
2200-2300	CFCN, Calgary, Alberta, Canada	6030			
2200-2300	CHNS, Halifax, Nova Scotia, Canada	6130			
2200-2300	Christian Science World Service	9465	15275	15300	15405
		17555			
2200-2300	CKWX, Vancouver, British Columbia	6080			
2200-2300	CFRB, Toronto, Ontario	6070			
2200-2300	KUSW, Salt Lake City, Utah	15580			
2200-2300	Voice of Hope, Lebanon	6280			
2200-2300	Radio Australia, Melbourne	15160	15240	15320	
		17795	21740		
2200-2300	Radio Beijing, China	3985			
2200-2300	Radio Havana Cuba	7140			
2200-2300	Radio for Peace Int'l, Costa Rica	21566	13660		
2200-2300	Radio Tonga, Kingdom of Tonga	5030v			
2200-2300	Voice of America-East Asia Service	7120	9770	11760	15185
		15290	15305	17735	17820
2200-2300	Voice of America-Eur/Pac. Service	9852	11805	15345	15370
		17610			
2200-2300	Voice of Free China, Taiwan	9850	11805		
2200-2300	Voice of U.A.E., Abu Dhabi, United Arab Emirates	9600	11985	13605	
2200-2300	WHRI, Noblesville, Indiana	13760	17830		
2200-2300	WINB, Red Lion, Pennsylvania	15185			
2200-2300	WRNO Worldwide, Louisiana	15420			
2200-2300	Radio Algiers, Algeria	9640			
2200-2300	WWCR, Nashville, Tennessee	15690			
2200-2300	WYFR, Okeechobee, Florida	11830	13695	15215	17612.5
		17845	21525		
2205-2220	Vatican Radio, Vatican City	9615	11830	15105	
2230-2300	Radio Polonia, Warsaw, Poland	5995	6135	7125	7270
2230-2300	Radio Tirana, Albania	7215	9480		
2230-2300	Swiss Radio Int'l, European Service	6190			
2245-2300	BBC English by Radio, London	7180	11945		
2245-2300	All India Radio, New Delhi	15110	11745	11715	9910
		9535			

2300 UTC [7:00 PM EDT/4:00 PM PDT]

2300-2315	BBC World Service, London, England	3915	5975	6175	6195
		7325	9570	9590	9915
		11750	11945	11955	15260
		17875			
2300-2315	FEBC, Manila, Philippines	6030			
2300-0000	Adventist World Radio, Costa Rica	9725	11870		
2300-2325	Radio Finland, Helsinki	11755	9645		
2300-2330	Kol Israel, Jerusalem	11605	9435	9930	
2300-2330	Radio Moscow North American Serv	6000	6045	7115	7150
		9685	12050	17700	17720
2300-2330	Radio Canada Int'l, Montreal	9755	11730		
2300-0000	Radio Moscow World Service	7370	15420	17570	21690
2300-0000	Radio Sofia, Bulgaria	15330	11680		
2300-2330	BBC English by Radio, London	6110	9825	11765	11820
		15390			
2300-2330	Radio Norway International, Oslo	9605			
2300-2345	WYFR, Okeechobee, Florida	5985	9505	15440	
2300-0000	A.S. Adventist World Radio-Asia, Guam	15125			
2300-0000	BBC World Service, London, England	5975	6175	6195	7325
		9570	9590	9915	11750
		11945	11955	15260	17875
2300-0000	CBN, St. John's, Newfoundland	6160			
2300-0000	CBU, Vancouver, British Columbia	6160			
2300-0000	CFCF, Montreal, Quebec, Canada	6005			
2300-0000	CFCN, Calgary, Alberta, Canada	6030			
2300-0000	CHNS, Halifax, Nova Scotia, Canada	6130	15405		
2300-0000	Christian Science World Service	9465	15275	15300	17555
2300-0000	Radio New Zealand, Wellington	17705	17680a	15485a	
2300-0000	CKWX, Vancouver, British Columbia	6080			
2300-0000	CFRB, Toronto, Ontario	6070			
2300-0000	KUSW, Salt Lake City, Utah	15580			
2300-0000	KVOH, Rancho Simi, California	17775			
2300-0000	Radio Australia, Melbourne	15160	15240	15320	
		17795	21740		
2300-0000	Radio Japan, Tokyo	11835	15195	17810	21610
2300-0000	Radio Luxembourg	6090			
2300-2330	Radio for Peace, Costa Rica	21566	13660		
2300-0000	Radio Pyongyang, North Korea	11735	13650		
2300-0000	Radio Tonga, Kingdom of Tonga	5030v			
2300-0000	Voice of America-East Asia Service	7120	9770	11760	15185
		15290	15305	17735	17820
2300-0000	Voice of U.A.E., Abu Dhabi, UAE	9600	11985	13605	

West Coast To
Alaska



رادیوی افغانستان آزاد

RADIO FREE AFGHANISTAN

OETTINGENSTR. 67
8000 MUENCHEN 22
WEST-GERMANY

هېوډان گرامی !
برنامه های ما را شما
میتوانید از ساعت (۶.۳۰) الی (۷)
عصر به وقت افغانستان روی
امواج کوتاه (۱۹۸۰)، (۲۵)، و (۳۱) متر
و تکرار از ساعت (۷.۳۰) الی (۸.۰۰) صبح
به وقت افغانستان روی امواج کوتاه (۲۵) و (۳۱)
متر بشنوید

frequency

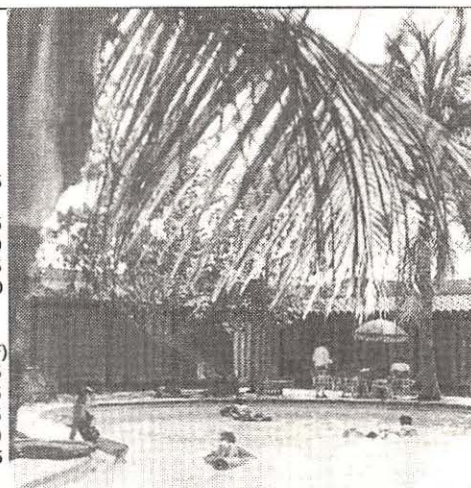
section

2300-0000	WHRI, Noblesville, Indiana	13760	17830		
2300-0000	WINB, Red Lion, Pennsylvania	15145			
2300-0000	WRNO, New Orleans, Louisiana	15420			
2300-0000	WWCR, Nashville, Tennessee	15690			
2305-2355	Radio Polonia, Warsaw, Poland	5995	6135	7125	7145
		7270			
2315-2330	BBC World Service, London, England	5975	6110	6175	6195
		7145	7325	9570	9590
		9825	9915	11750	11765
		11820	11945	11955	15260
		15390	17875		
2330-0000	Voice of Vietnam, Hanoi	15010	12010	9840	
2330-0000	Radio for Peace Int., Costa Rica	7375	(+13660	21566	M-F)
2330-2345	BBC English by Radio, London	3915	6080	7180	11865
2330-0000	BBC World Service, London, England	5975	6110	6175	6195
		7325	9570	9590	9825
		9915	11750	11765	11820
		11945	15260	15390	17875
2330-0000	BRT Brussels, Belgium	9925			
2330-0000	Radio Budapest, Hungary	11910	15160	9835	9520
		6110			
2330-0000	Radio Kiev, The Ukraine	17665	17690	15180	9765
		7400			
2330-0000	Radio Moscow North American Serv	6000	6045	7115	7150
		7310	9685	12050	17700
		6120	9760	11825	
2330-0000	Radio Tirana, Albania	6190			
2330-0000	Swiss Radio International, Berne	9395	11645		
2335-2345	M-A Voice of Greece, Athens	6080	11890	13690	
2345-0000	Radio Berlin International, GDR	15575			
2345-0000	Radio Korea, Seoul				

A lot of changes took place on the bands last month - we were out there waiting for them, and you'll see them here next month. But, if you should find something that we've possibly overlooked, please send it Greg Jordan, 7009 Brandemere Lane, #1, Winston-Salem, NC, 27106-2846.



Keep up with the world by tuning in stations like "Radio Free Afghanistan"; for proof you did, you can get lucky with a QSL from the station like the one Garie Halstead of St. Albans, West Virginia, sent to us. Each month on page 46 you'll get some help on where to write and what to expect.



Thanks to: Michael Choleva, Ohio, Radio Havana Cuba (left); Gert Jahnke, Quebec, Radio Nacional do Brasil (below); John Flake, North Carolina, VOA, Radio Netherlands, and Radio Kiev (bottom)



Radio Shack's Realistic DX-360 Portable

In the early Eighties, when the revival of shortwave listening was just getting underway, a number of manufacturers introduced receivers with digital frequency readout -- advanced stuff back then.

Heigh-Ho Silver!

Among those to do so in a low-priced portable was the Japanese firm of Shin-Shirasuna Electric Corp., known outside Japan simply as "Silver." Its mid-sized XF1900 went for under \$100 -- digital readout, clock and all.

Of course, at that price, you don't expect the moon and stars thrown in, too. The Silver XF1900 had single-conversion circuitry and mediocre selectivity. This meant that stations tended to come in mixed with a variety of extraneous sounds.

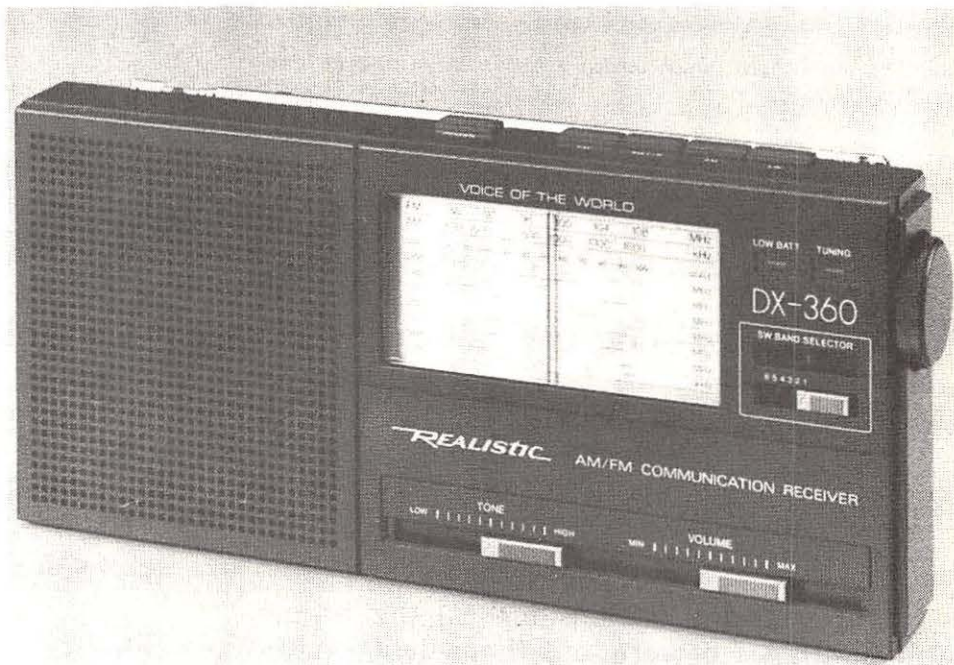
Some years back, we quit finding the XF1900 in stores, and thus concluded that it had gone to the Big House in The Ionosphere. *Tempus fugit*, and the waves of technological improvements to world band radios had left this middling-technology portable in the dust.

Radio Stripped of Important Feature

Well, almost. Not long after the XF1900 was introduced, the giant electronics retail chain of Radio Shack commissioned Shin-Shirasuna to produce for it a variation of the XF1900. This model, which came to be known as the Realistic DX-360, has been on Radio Shack shelves ever since at the same \$100 price as the XF1900.

So far, so good. But when Radio Shack specced out the DX-360, it had the manufacturer strip off the one feature that made the radio worthwhile: the digital frequency readout. Lacking this, the radio could be tuned only via a coarse analog scale that gives the listener virtually no idea as to which channel the radio is tuned. It's the sort of dreadful hit-and-miss tuning characteristic of most shortwave radios of the Sixties and Seventies.

While they were at it, Radio Shack also stripped off the XF1900's clock/timer and longwave-reception facilities. Thankfully, they didn't remove the speaker, as well!



You Can't Get There from Here

Thus denuded, what is left is a compact portable with reasonable audio, but mediocre overall performance and virtually no way to tell where the radio is tuned. Finding the one station you want among the hundreds of available channels requires the patience of a Tibetan monk, plus generous doses of luck. You have to tweak the tuning knob degree by degree up the dial until your ear tells you that amidst the Babel of world band babble the station you want to hear has been tuned in...at last.

Of course, by that time the program you had hoped to enjoy may have long since gone by the board.

Performance Otherwise Reasonable for Price

Otherwise, the overall performance of the DX-360, once a desired station has finally been unearthed, is mediocre, but reasonable. The '360 is, by the standards of smaller portables, fairly sensitive to the reception of weak signals. This can be especially useful if you listen during the daytime, when signals tend to be somewhat weak.

Selectivity is less worthy. The set's lone bandwidth is too broad to keep out much of the racket emanating from stations on adjacent channels. However, it's no worse in this regard than are a number of other models in and around the '360's price range.

Images: Why Cheap Sets Sound So Bad

The biggest problem is that the set uses low-cost single-conversion circuitry. Here's what this means.

For over a half century, radios have used what is known as the *superheterodyne* principle. Superheterodyne radios, as opposed to the earlier regenerative models, take the frequency of the received signal and convert it to what is called an "intermediate frequency," or simply "IF."

This system has done wonders in bringing about good-performing radios, but it does have one drawback. That intermediate frequency can allow "false" signals to develop. The formula is this: Take the intermediate frequency, multiply it by two, and signals either above or below (which depends on the receiver) by that amount from where the radio is tuned will tend to be heard mixing in with the station you're trying to hear. These "ghost" signals are known as *images*.

So, say you have tuned a radio with an IF of 455 kHz to 6195 kHz, and that images from this particular radio come from the high side. If there is a signal, such as Radio Moscow, on 7105 kHz ($2 \times 455 \text{ kHz} = 910 \text{ kHz} + 6195 \text{ kHz} = 7105 \text{ kHz}$), it will tend to be heard interfering with the station you're trying to hear on 6195 kHz.

Of course, world band listening is difficult enough without having a receiver that creates spurious forms of interference. So better radios now come with two or more IFs. These are known as double, or multiple, conversion radios, and they are far less likely to suffer from image problems.

Generally speaking, radios going for under \$100 are single conversion, whereas the vast majority of models over \$100 are multiple conversion. The DX-360 is single conversion.

Marketing Strategy Drives Out Mediocre Receivers

In all, given that the DX-360 is sometimes on sale at Radio Shack stores for under \$80, its performance -- mediocre selectivity, images and all -- is not unreasonable.

What is unreasonable is not being able to tell where the radio is tuned. With some models in the '360's price class, tuning is a bit coarse -- perhaps to the nearest few channels. That's not ideal, but all that it means is that you have to poke among a relatively small number of stations to flush out the one you wish to hear.

But when, as on the '360, all you can tell is the meter band the radio is tuned to, the set becomes less of a receiver than a novelty. Once the "gee whiz" aspect of shortwave listening fades away, the maneuverability of the '360 becomes so hopeless that listening no longer is a joy, or even tolerable.

World band radios that are this unsatisfactory tend to wind up gathering dust -- or being used, instead, as AM/FM devices in the kitchen. A newcomer to world band whose first radio is of this caliber tends, understandably, to blame the medium, rather than the radio, and thus is lost forever to world band radio...and to step-up sales.

It's that last point that has prompted savvy firms to avoid including models in their line that are simply awful. Lousy models tend to kill off geese that could lay more golden eggs.

You can see the result in the reported sales patterns for Sony and Radio Shack. At Sony, where all models are of at least good quality for the price, in some years the best-selling models are in the \$300-400 range.

However, at Radio Shack, where the introductory model is the dismal '360, sales of the step-up DX-440, a worthy receiver, are uninspiring. Radio Shack customers don't trade up -- they drop out.

The Bottom Line

The bottom line is that the Realistic DX-360, even when it is on sale for under \$80, is a pretty awful radio. For less money, you can get the Magnavox D1875, which performs at least as well, but can be tuned fairly accurately.

Better yet, unless you are looking for a simple radio to take on trips, is to realize that acceptable world band radios tend to be priced in the same range as a VCR. Yes, a VCR could be produced to sell for \$99.95...stripped of a counter, timer, clock, channel indicator and remote control, and with a tendency to record interference from channels other than the one you wish to see.

You wouldn't buy a video device like this, and the same should apply to a world band radio.



You can hear Larry Magne's equipment reviews the first Saturday of each month, plus PASSPORT editors Don Jensen and Tony Jones the third Saturday, over Radio Canada's "SWL Digest." For North America, "SWL Digest" is heard at 8:10 PM ET on 5960 and 9535 kHz, with a repeat Tuesday at 8:30 AM ET on 9635, 11855 and 17820 kHz.

PASSPORT'S "RDI White Paper" equipment reports contain everything found during its exhaustive tests of communications receivers and advanced portables. These reports are now available in the U.S. from Universal Shortwave and EEB; in Canada from PIF, C.P. 232, L.d.R., Laval PQ H7N 4Z9; in Europe from Interbooks, 8 Abbot Street, Perth PH2 0EB, Scotland; and in Japan from IBS-Japan, 5-31-6 Tamanawa, Kamakura 247. For a complete list of reports, send a self-addressed stamped envelope to RDI White Papers, Box 300, Penn's Park PA 18943.

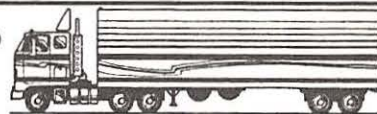
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Regency INF-7 Desktop Scanner



The DELETE key may be used in two modes: in LIBRARY search, up to 48 frequencies may be skipped; in BANK mode, any of the memory channels may be erased to provide space for new entries.

A weather key activates autosearch among the seven U.S. NOAA National Weather Service channels as well as one additional Canadian frequency. Additionally, a weather ALERT key permits the little INF7 to be stand by for any severe weather bulletins from the NWS.

Police, fire and medical channels are extracted from the low, high and UHF land mobile bands (no 800 MHz). The unit runs from a special AC wall adaptor and provides over 1 watt of low-distortion sound from its top-mounted speaker.

The INF7 is available in the \$110-\$120 price range from MT advertisers.

What's New in Old Equipment?

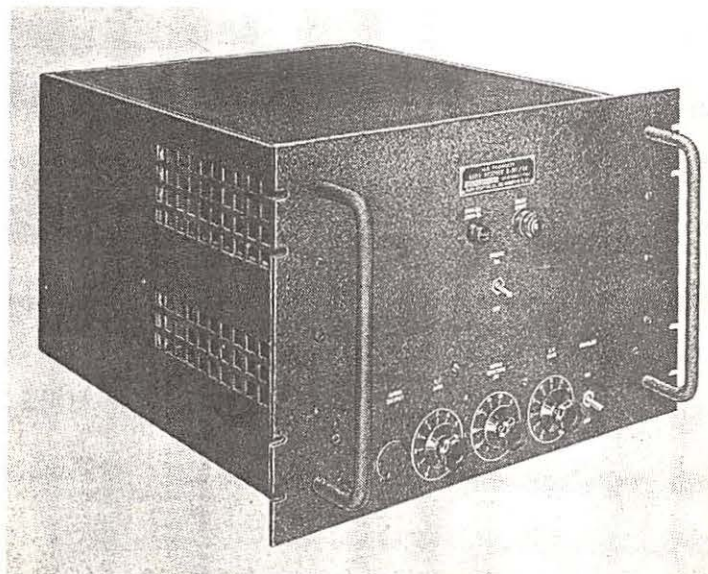
Of all of the frequency ranges left out of most scanners that should be included, the 225-400 MHz military aircraft band heads the list. Recently, Norm Lietsche (PO Box

Even the most casual glance at the new Regency INF7 reveals that it is different -- much different -- from other scanners on the market. This doesn't mean that it is necessarily better, but it really is unusual.

Although very simple to operate -- and that is its drawing card -- that simplicity assumes a careful reading of the instructions and experimenting with the commands. The operational sequence is not standard.

Basically, the INF7 is a ten channel scanner with frequencies drawn from a "library" of several hundred police, fire and medical allocations. To load the memory channels, the user presses the LIBRARY key, inviting the scanner to search its preprogrammed channels for activity.

When an active channel is found, the user presses the SAVE key, automatically loading that frequency into one of the ten memory slots. Since the display cannot show the frequencies, the INF7 avoids wasting memory channel space by refusing to load any duplicate frequencies. To scan these ten memory channels the user presses BANK.



191, Canandaigua, New York 14424-0191; phone 1-716-394-9099/0148) sent me a sample of an inexpensive way to listen to any one frequency in that range.

Operating from 115/230 VAC @ 50/60 Hz, the 30-year-old R-361/GRR7 is the size and weight of a window air conditioner and designed for rack mount, but for only \$45 plus shipping Norm will special order and install a crystal of your choice, align the receiver to your frequency, test it and even provide a schematic diagram. A complete manual reprint is \$15.

The R-361/GRR7 has excellent sensitivity and plenty of audio (speaker not supplied). Although best matched at 600 ohms, a standard 8-ohm speaker connected between terminals 1 (or 2) and 5 on the rear panel works fine. A small salvaged speaker could easily be mounted inside one of the ventilation ports.

A dual conversion receiver with a first IF at 40.4 MHz and a second IF at 6 MHz, it employs a series noise limiter and offers squelch as well. Finding an antenna connector, however, is nearly impossible; change it or check with Norm about an appropriate connector. Replacement tubes are readily available from surplus dealers and hamfests.

Antenna Electronics Mobile Scanner Antenna

One high performance antenna that most scanner enthusiasts haven't heard about is the Anteco MM-2054, a center-trapped, multiband receiving antenna with an adjustable-length top section for optimum low band (30-50) MHz performance. It comes with 17 feet of RG-58/U coax and your choice of Motorola or BNC connector.

A stout antenna over three feet tall depending upon your low-band section adjustment, it has a sturdy base spring and massive magnet to absorb the rigors of mobile driving. Best of all, it has a suggested list price of under \$40.

On a recent thousand-mile road trip test, performance was excellent, equaling or outperforming any other mobile scanner antenna we have ever tried on low, high, UHF and 800 MHz. If you can tolerate the height, the MM-2054 is the antenna for mobile scanning. Call Anteco at 1-800-433-7631 to find a dealer in your area.



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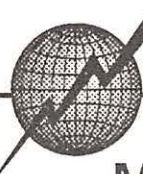
- Adds scan function to radios that don't allow this from front panel.
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Artist's conception

Boom Ball Radios

The company is called "Switch It Inc.; the product, "Boom Ball" radios. The round radios, built with clear Lexan -- the same heavy-duty plastic used in aeroplane windows -- show the multi-colored internal parts.

Adding to the entertainment value, three models also have LED lights that flash to the beat of the music. The antenna doubles as a necklace so that you can wear the billiard ball-sized radio around your neck.

"People can own several Boom Ball radios and coordinate them with different clothes," suggests Switch It president Peter Hamilton-McDonell. Yes. A fine idea.

The price is \$34.95 from Switch It Inc., 2397 Shattuck Ave., Berkeley, California 94704.

What's that? Reader Fred Chesson of Waterbury, Connecticut, suggests a scanner version.

SOS Shrill Alarm

The SOS Shrill Alarm is a new personal alarm that fits in a pocket or purse and, when activated, issues a piercing noise. This noise, claims the manufacturer, is "much louder" than most individuals can scream. (The manufacturer has obviously never been at *Monitoring Times* near deadline.)

The four inch device is powered by a nontoxic aerosol tube and weighs two

ounces. The manufacturer also says that the charge "should last for 25 to 30 uses."

If you're planning on being attacked 25 to 30 times, get the SOS Shrill Alarm for \$9.95 plus \$1.00 shipping from Berk International, P.O. Box 5294, Garden Grove, California 92645.

The Stealth Bra

Kip Fuller, the man who invented the Guardian Interlock, which deactivates a car's ignition system if the driver can't pass an alcohol breathalyzer test, is now working to help motorists outwit radar traps.

The inventor's latest gizmo is known as the stealth car bra, so named because it resembles a brassiere strapped to the front of the car (Sorry gents, no photos.)

Made of radar-absorbing carbon fibers, the bra enables a car to fool police radar until it reaches close range, presumably allowing the driver to spot the trap and slow down.

Reacting to criticisms that he is anti-police, Fuller says that he tries to develop products that assist the government in doing its job.

But how does a stealth car bra help the government? Fuller smiles. "It keeps them on their toes." Another reason why the 33 year old Denver resident is smiling. The bras start at \$299.00 each. Check your local parts store for this one.

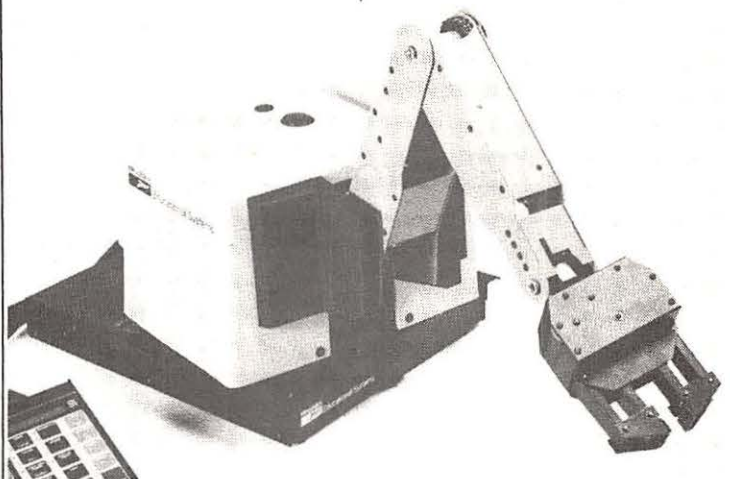
A/V Pocket Watch

The video revolution has made VCRs and pre-recorded movies an integral part of many people's lives," says Jeff Cove, National Marketing Manager for Panasonic's VHS Division.

"Now we're finding that many people do not want to be tied up in front of a TV

to catch up on the latest releases. People want their video on the go." Attempting to meet this need, Panasonic is now offering the seemingly insatiable consumer the PV-M429 "A/V Pocket Watch."

The "Pocket Watch" is a combination full-size VHS VCR and four-inch screen liquid crystal (LCD) TV, housed in a package the size



of a desktop dictionary that weighs under five pounds, without battery. The PV-M429 features a built-in speaker and audio output for private headphone.

This little gem retails for \$1,399.00. Stop talking entirely. Get one for everyone in the family.

Heathkit Catalog

If you've never gotten on Heathkit's mailing list, you've been missing some interesting catalogues. The most recent one features hands-on, at-home, courses

on subjects ranging from DC electronics to computers. You can even get Continuing Education Units (CEU) if you complete the work.

The Robot Arm Trainer, for example, is an industrial-style robot capable of executing up to 50 tasks that you can build. An onboard 8-bit computer and six slave microprocessors allow the

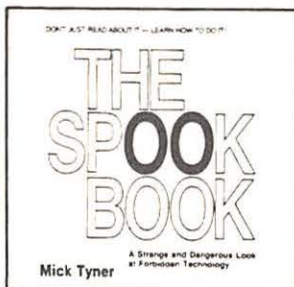
simultaneous operation of the trainer's six axis. Built-in firmware even protects the trainer if you should program it to exceed its physical limitations.

The kit is \$695. Assembled, it's \$1,295.00. If you'd like more information or just to pick up a copy of the catalogue, call 1-800-253-0570.

Acoustic Architect

Another mailing list worthy of an award in tenacity is DAK Industries, Inc. The DAK

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stands for Drew Alan Kaplan, the real or imagined person who narrates the catalogue in a homey, "why use ten words when you can use ten thousand" style of writing.

In this edition, for example, Drew takes a few minutes to tell us about a product he sells: "I was furious... The factory in Japan called me in the middle of the night and told me they wouldn't be shipping me any breadmakers..."

Drew sells breadmakers along with things like the ADC Sound Shaper 300SL. Graphic equalizers, such as this one, are becoming recognized throughout the shortwave DX community as a boon to cleaning up the audio of difficult stations, aiding in identification.

This one is a 10-Band Graphic Equalizer, has 20 Linear Activator Controls, two Sets of tape inputs and outputs and a spectrum analyzer. The DAK price on the ADC Sound Shaper is \$149.00 plus \$8.00 shipping from 1-800-DAK-0800.

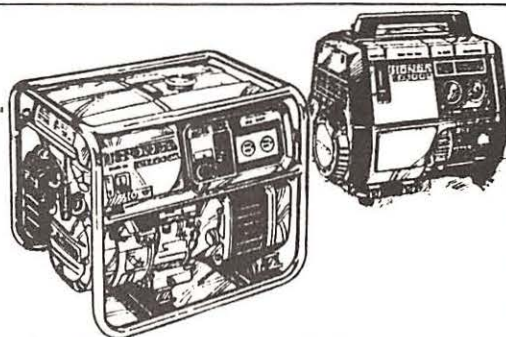
One other thing, DAK is now selling its own name brand shortwave radios. Look for a Larry Magne review in this magazine shortly.

Northern

Northern bills itself as "Where the Pros and Handymen Shop." It's a fantastic catalogue full of tools and gadgets of all sorts, from drills to lighting fixtures to multi-band radios.

What caught our attention, however, was a full line of portable generators ranging in price from under five hundred dollars to over three thousand.

With run times as high as 8.5 hours, these are perfect for emergency



radio work or just for home use.

To get a copy of Northern's catalogue, write to P.O. Box 1499, Burnsville, MN 55337-0499.

Seeing DX

For those who want to see the places they hear but lack the requisite funds for plane fare, the House of Tyrol has the answer: travel videos.

The lineup of tapes is fairly extensive. Travel Russia for 60 minutes (A Russian Journey: \$29.95) or join the Finns in a sauna (Fresh Finland: \$29.95). From Israel to the Himalayas, from New Zealand to Bangkok, there



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Be sure to include the name of the catalog, the item's description, price and shipping information along with the phone order number. Send it to "Catalogs," c/o MT, P.O. Box 98, Brasstown, NC 28902.

How Solid is Your Ground?

Antenna performance and personal safety are partly dependent upon the quality of the ground system used at your listening post. The same is true if you have an FCC license and transmit with the same antenna system.

When an operator also uses a transmitter, a good earth ground can help prevent unwanted RF currents from flowing in and on the equipment in his radio room. Stray RF energy can disrupt the performance of electronic circuits. It may also "bite" you when you touch the metal cabinet of your equipment or touch your microphone!

Defining a Station Ground

Some SWLs (shortwave listeners) drive a short metal rod in the soil and assume that it is a suitable ground for the station. Even a very long metal rod can't provide an effective ground point of reference if the soil is sandy and dry. It may require several 6-8 foot rods driven into the soil and bonded together (Figure 1) to approach the effectiveness you desire for your ground.

If you have copper cold-water plumbing in your home, you should connect your station ground system to the piping in an effort to enhance the overall ground system. If this is done, be sure to use as short a connecting wire as practicable. I recommend a wide copper strap or the shield braid from a piece of RG-8 or RG-11 coaxial cable. This reduces the DC resistance of the ground lead (better conductivity) and lowers the inductance of the lead. Keeping the inductance minimized is important in the interest of providing a quality ground for RF (radio frequency) currents.

All leads that connect ground-system conductors need to be as large in cross section as you can manage. Try to keep them as short and direct as you can. This will enhance the quality of the ground system.

In an ideal situation, we should be able to obtain zero (finite) resistance between our ground system and a true ground, or between two man-made ground systems that are close to one another. We would use a standard ohmmeter to make this measurement. Ground systems that we radio enthusiasts develop are seldom of that quality, owing to the conductivity of the soil in various parts of the USA.

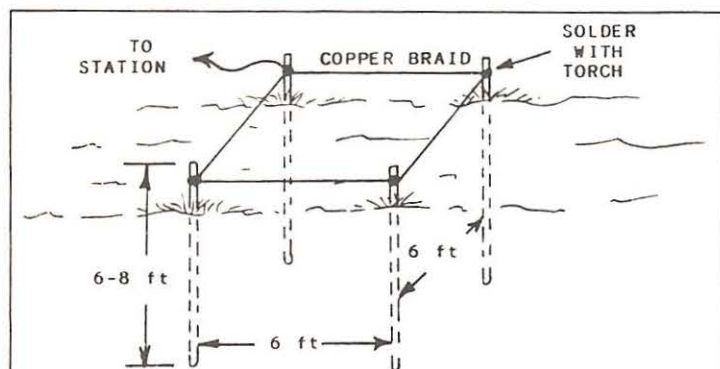


Figure 1 -- System of ground rods for use as a station DC ground. They should be located as close to the radio room as practicable in order to shorten the connecting lead. A propane torch may be used to solder the bonding straps to each ground rod.

Wet earth (swampy areas) and salt-infused soil (on ocean shores) generally provide a good ground system with minimum effort. Those who live in desert locales may never be able to create a quality earth-ground system.

Antenna Performance versus Earth Ground

Many shortwave wire antennas are inefficient if a ground system is not used with them. This is true of antennas that are 1/4 wavelength long, or if they are multiples of 1/4 wave (such as a 3/4-wave wire or 1-1/4-wave wire). These antennas depend on their image halves (missing part of a dipole antenna) occurring in the ground (see *The ARRL Antenna Book* or *The WIFB Antenna Notebook* by the ARRL).

Antennas that are 1/2 wavelength long, or multiples thereof, are not dependent upon an earth ground for good performance, although the height of these antennas above ground has a marked effect on how they perform. We need a good ground system also for 1/4-wave vertical antennas.

We need to define at this point how a DC ground and one for an antenna differ. A group of metal rods driven into the soil is not what we require for an antenna ground. Although a DC ground system will serve as a reference point for an antenna (a ground point for the coax shield braid and metal mast or tower), it will not enhance the performance of the antenna. Instead, we need either a single-wire counterpoise (Figure 2) or a ground-radial system (Figure 3).

The greater the number of in-ground or above-ground radial wires the better the antenna efficiency. Although some SWLs use as many as 120 1/4-wave radial wires, as few as 15 or 20 wires will suffice for all but the most dedicated purists. The ground radials need to be in the immediate field of the antenna deployed radially from the antenna feed point if they are to perform well.

The wire size is not important, since there is no appreciable current flowing on them. Apart from its fragility, no. 30 enamel wire may be used. Soil acidity and alkalinity quickly destroys small-diameter wire. I like to use nothing lighter than no. 14 copper wire for my radials, although I have gotten by with no. 20 enameled copper wire.

Radial wires may be buried two or three inches in the soil (a lawn

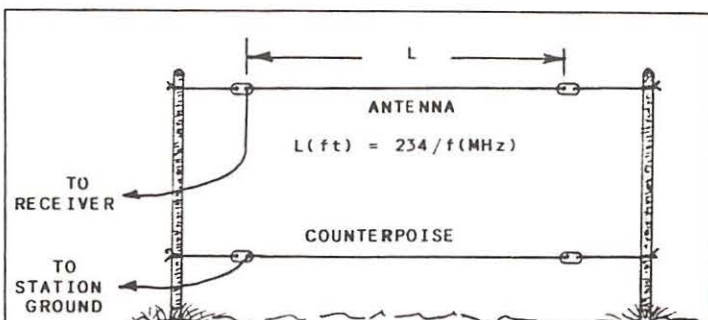


Figure 2 -- An end-fed wire antenna with a counterpoise ground below it. The counterpoise should be the same length as the antenna. The wire gauge for the counterpoise is not critical.

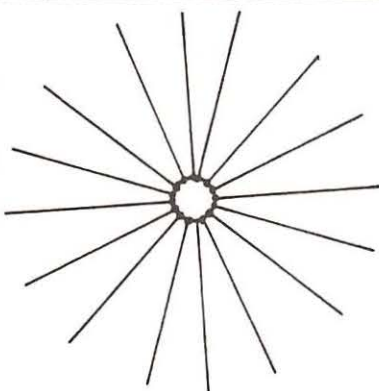


Figure 3 -- A ground-radial system for use with quarter-wave end-fed or vertical antennas. A 10-inch diameter center ring (1/4-inch OD copper tubing) serves as the common point for the wires. The coax shield braid and mast or tower are also connected to the center ring.

The radial wires should be 1/4 wavelength long at the preferred operating frequency of the antenna. Shorter wires may be used if space is limited. Many short wires are better than no wires at all. The radial wires may be buried 2-3 inches in the soil, or they may be used above ground with insulators at the far ends (see text).

edging tool is great for this) or they may be suspended above ground at a height that allows head clearance for those who walk in the yard. You can usually get by with four above-ground radials. More are needed if you bury your wires.

Combine Your Ground Systems

Your ground radials or counterpoise ground may be connected to your DC ground (water pipes and ground rods) to improve the effectiveness of the overall ground system. If there is a chain-link fence on your property, connect it to your ground system too. The more metal conductors the better.

Your antenna should have a drain choke or lightning arrestor outside the house. This is a safety measure that is essential. These devices provide a low-resistance path for the lightning to follow (to

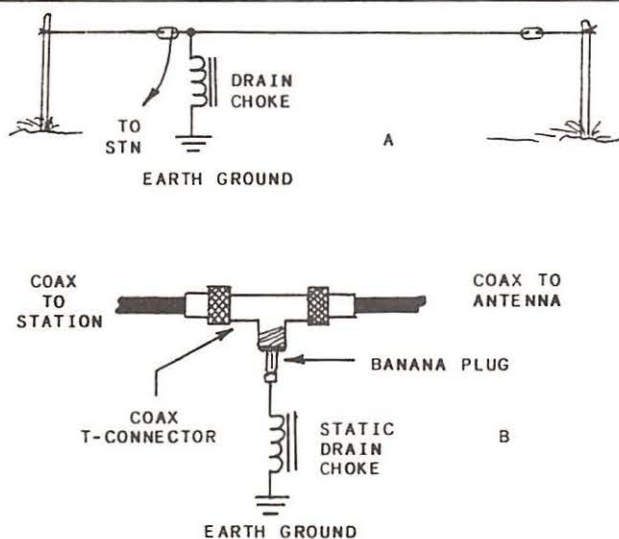


Figure 4 -- The example at A shows how to attach a static-drain choke or lightning arrestor to an end-fed wire. See the text for more information. The illustration at B shows how to use a drain choke or lightning arrestor with a coaxial-cable fed antenna.

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ground) without impairing the antenna performance. A static drain choke will often eliminate static-charge build-up on an antenna during rain or snow storms.¹ The choke should have an inductance of no less than 2 millihenries for 1000 kHz and higher. Figure 4 shows how to connect a drain choke to your antenna.

Tag Ends

I failed to mention earlier that a cold-water pipe system that uses iron pipes may also be used for a DC ground. Check across each joint with an ohmmeter to make certain there is a low resistance (zero resistance, ideally). If not, you can place a conductive strap across the poor joint or joints. Some of these older systems may have resistive joints because of the sealant compound that was used on the pipe threads.

The station ground should be connected to the chassis of your receiver, antenna tuner and transmitter (if you have one). I bond my pieces of equipment together by means of RG-8 coax shield braid (short leads), then attach the earth ground to one piece of the equipment.

If for no reason other than personal safety, you need a quality DC ground for your SWL setup. If you construct a ground system for your antenna, you will probably observe an improvement in reception on the short-wave bands.

Footnote¹

A weatherproof pot-core static drain choke may be obtained from Oak Hills Research, P.O. Box 250, Luther, MI 49656. Send \$5 for each choke.

mt

A Scanning Mod for "Uncle Skip"

It was at the grand affair known as the SWL Winterfest that I first had the good fortune to meet several of the *Monitoring Times* staff -- Uncle Skip Arey among them. Over mugs of Molsen's Golden, equipment was cussed and discussed, plans made, and deals cut.

It was a comment by Uncle Skip that caught my attention and started my fertile imagination working on some mods for the R-390 communications receiver. Skip has two of these beasts and was lamenting the lack of scanning modifications for the old relics. Hmmmm ... a scanning mod for the R-390 ... Why not?

This mod is not to be undertaken unless you are experienced in modifying electronic equipment. Neither *MT* nor I will assume any responsibility for damage caused to radio equipment which has been modified as a result of this article.

The first portion of this modification will be the mechanical mods to the R-390. The final portion will be the electrical connections needed to make the modifications work. Uncle Skip -- This one's for you!

With the R-390 sitting on a firm flat surface facing you, remove the main tuning knob (the one right under the digital readout display) of the receiver using a nonmagnetic, splined hex tool (FSN 2124-32-4686-177B) or small pry bar and mallet.

If you use the pry bar, do not put excessive pressure against the front panel as this will mal-align the gear train behind the front panel, and the mods will not work (neither will the receiver, for that matter).

After the main tuning knob is removed, inspect the shaft to ensure that it is in good condition and not severely worn.

If all has gone well so far, you now have an R-390 with the main tuning knob removed sitting on a firm flat surface, staring you in the face. Now obtain a variable speed, reversible electric drill with a 3/8-inch chuck.

Open the chuck to the proper diameter to accept the main tuning shaft. Mate the drill chuck to the main tuning shaft and tighten the chuck down with the chuck key. This completes the mechanical portion of the modification.

The electrical mod is DANGEROUS as there are lethal voltages present. Take your time and do this portion with extreme care.

Take the power cord for the variable speed, reversible drill with the 3/8-inch chuck and plug it into the nearest 110 VAC wall outlet. (NOTE: If you are overseas, ensure that your variable speed, reversible electric drill with the 3/8-inch chuck is of the proper operating voltage for your location.) This completes the electrical portion of the scanning modification.

Now for the "Smoke Test." With the receiver set to your favorite HF band segment, the power turned on, the speaker and antenna connected, SLOOOOWLY squeeze the trigger on the variable speed, reversible electric drill with the 3/8-inch chuck.

If all goes well, the drill will start turning slowly, and so will the main tuning shaft. Simultaneously, the digital readout will start moving up (or down) in frequency depending upon which direction the variable speed, reversible electric drill with 3/8-inch chuck is turning.

If the BFO is placed in the "ON" position, a heterodyne can be heard each time the receiver is tuned across a signal. With a little

practice, you should be able to stop very close to the desired frequency and back up (using the reverse function of the variable speed, reversible drill with the 3/8-inch chuck) and plop right on frequency.

Obviously, care must be taken not to go too fast; when you approach either end of the 1 MHz segment of the band you are tuning, you will have a fraction of a second to stop the drill or reverse it and start going back down the band segment before running out of gear train and jamming up the receiver beyond all hope.

By manually turning the "MHz" dial in combination with the variable speed, reversible electric drill with the 3/8-inch chuck, you can scan the full HF spectrum! Wow! Almost as neat as having a Kenwood R-2000!

Well, there you have it. A super mod that will make this old war-horse really "sing." Obviously, the mod can be removed and the knob reinstalled to return the R-390 to its original condition and resale value.

The only drawback that I can find is trying to use the receiver on DXpeditions in a primitive area. You must locate a LARGE current bush and plug the R-390 in in order to use the receiver.

My thanks to Uncle Skip for furnishing the idea for this "mod." And now, on a more serious note:

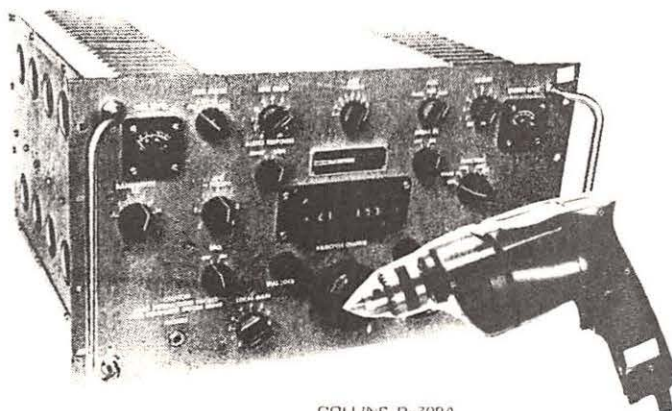
Mods for BC200/205XLT Owners

We have had a lot of mail lately requesting mods for Uniden/Bearcat scanners, so this month we offer a simple mod for the BC 200/205XLT to ensure complete frequency coverage in the 845 MHz range.

If you own a BC200 or 205XLT and do not desire to delve inside the case to restore frequencies deleted at the factory, then there is a simple fix that does not require any tools to perform. Simply add 21.7 MHz to the deleted frequency and enter the higher (image) frequency. Reception is identical in signal strength to that which would be heard on the scanner if the restoration modification was done.

Although it is a little cumbersome to do things this way, it does get the job done for those individuals who have an aversion to popping the top on their favorite scanner and digging around inside with a soldering iron.

Thanks to a chance comment from Uncle Skip, MT has made a scanning breakthrough which is simplicity itself!



COLLINS R-390A

Monitoring Times invites you to submit your favorite projects for publication. For more information, contact Rich Arland, c/o MT, P.O. Box 98, Brasstown, NC 28902

Uniden, like several other scanner manufacturers, decided to delete the coverage of certain "Sacred Frequencies" to frustrate scanner users. The frequencies deleted at the factory can be restored easily enough. However, be sure that you are technically capable of working on high density circuit boards and also have the schematic, or better yet, a service manual, for the scanner. *Monitoring Times, Grove Enterprises and Richard Arland will not take any responsibility for modifications performed on equipment discussed in this column.*

Step 1: Slide off the battery pack and remove the antenna from the scanner. Take a small Phillips screwdriver and remove the screws from the back and the screws which hold the battery spring at the base of the scanner. Be sure to remove the battery spring itself. Carefully pry the bottom of the rear cover from the radio and remove the cover. Set the cover, screws and battery spring aside.

Step 2: Locate the two screws at the base of the circuit board and remove them. Gently pull the front panel from the scanner frame and separate them.

Step 3: Using the illustration in fig. 1, locate the microprocessor IC (labelled UNIDEN UC-1147) and the 10 K ohm (brown-back-orange) resistor positioned above the letters "DEN" on the microprocessor IC. Note: This resistor is a leadless type, so pay attention and locate the proper part.

Step 4: USING EXTREME CARE solder either a 1/8 or 1/4 watt resistor (any resistance between 2.2 K and 10 K ohms will work) from the LEFT side of the resistor in step 3 to pin 8 of the adjacent IC labeled K1013 (refer to fig. 1).

Step 5: CAREFULLY reassemble the scanner paying particular attention to the alignment of the dual inline connector at the bottom of the PC board and the mating socket. Ensure all holes line up and insert and tighten screws.

Step 6: Put the battery pack back in place a fire up the scanner to make sure that the display works. NOTE: if the display does not work, check to be sure the battery is fully charged and the dual inline connector is properly seated and aligned.

Step 7: Press "MANUAL, 845.0 E". Within two seconds the frequency 845.000 should appear on the display.

Step 8: Properly congratulate yourself (a good pat on the back is sufficient); you have successfully restored the factory deleted frequencies to your Uniden scanner. Now sit back and have a listen and enjoy your handy work.

All for this month, gang. Write and let me know your thoughts and ideas for future columns. Remember, the main idea in pursuing this hobby is to have FUN.

73s es Gud DX.

mt

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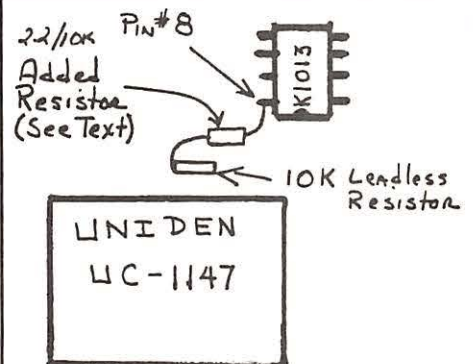


Fig. 1

The "SUPER LOOPER":

A Small Low-Noise Directional Antenna for the AM Band

How would you like to have a small, effective, broadcast band DX antenna which would fit easily on the table near your receiver? One with sharp directivity which can help you cut through the QRM and QRN (interference) which can be "as thick as pea-soup" at times? One that isn't that difficult to make, either ("easy as duck soup")?

Well then, check out this month's small easy-to-make antenna which I should perhaps call the "souper-looper," but choose, for obvious reasons, to call the "super-looper."

Small loop antennas have long had a place of respect in the hearts of AM broadcast band DXers and others who like it for its ability to pull in the station they want, while rejecting other stations which are operating right on the same frequency! Obviously, for folks who are fond of DXing the AM band, or just listening to the stations they want to hear without interference, this antenna can be very useful.

LET'S MAKE ONE!

To make this antenna, you will need two pieces of wood (any wood slats, even dowel rods or plastic tubing can be used): one 45 inches long, the other about 36 inches long. They may be anywhere from 3/8 inch to 5/8 inch or so wide.

You also need about 100 feet of any small diameter insulated wire, a dual-section 335 pf-or-so per section tuning capacitor (two single-section tuning capacitors will work, too); and a plug to fit the input to your receiver. You may make the base from a large slab of wood or whatever you wish.

1. Notch the two frame cross-pieces as shown in Figure 1. Make the notches large enough to allow the pieces to fit together as shown in Figure 1. You don't have to glue these pieces together if they fit closely, as the wire will help hold them in place, once the loop is wound. Drill the holes indicated on

the upright cross-piece, as shown in Figure 1. The exact placement of these holes is not critical.

2. Next, you will saw the shallow slots into which you insert the windings. There are 13 slots in each arm. Make the slots about 1/4 inch deep. For sawing these slots, a thin-bladed saw is best. You must, of course, use a saw which cuts a slot wide enough to let you slip the wire which you are using into the slot. If you work carefully, an ordinary handsaw may work okay.
3. Attach the tuning capacitor to the upright wood cross-piece just below the loop, as shown in Figure 1. You can do this with screws, if your capacitor has screw-holes in it. Otherwise a glue like "Goop"* or a big blob or two of silicone sealant works fine. Don't let any glue get inside the capacitor.
4. Wind the single output turn around the frame in the middle slot of each arm. Its ends should run through the two small holes provided for them as shown in Figure 1. Glue them where they exit these holes with a small glob of Goop, silicone sealant or other glue.
5. Wind in the 12 turns of the large loop as

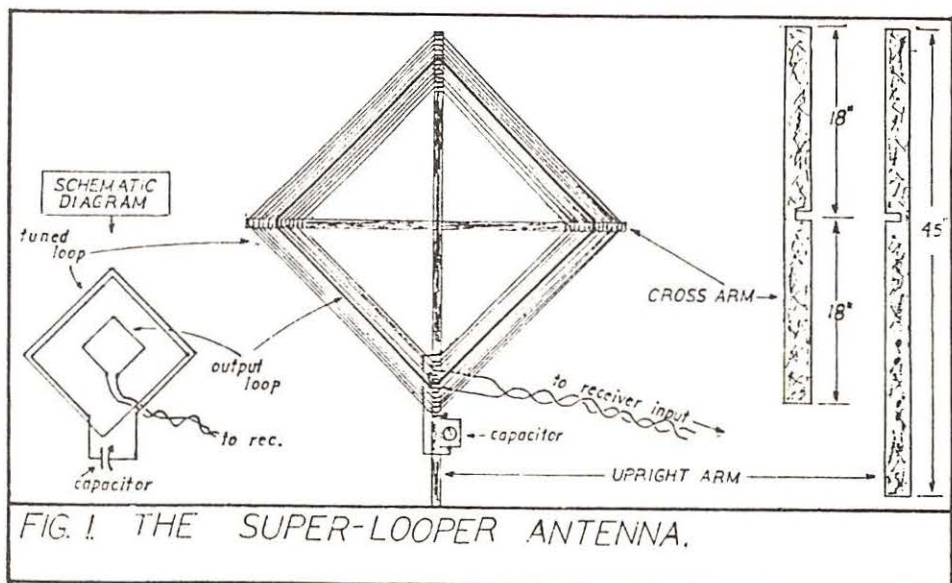
shown in the Figure. Put the ends of this loop through the small holes drilled earlier to receive them, and glue them where they exit these holes.

6. Attach the ends of the large loop to the appropriate terminals of the tuning capacitor. This means that one end of the loop goes to both of the rotor terminals of the capacitor and the other end goes to both of the stator terminals.

You should find a diagram of the way the terminals connect to the inside of the capacitor packaged with the capacitor when you buy it. Solder the wires in place.

7. Make a lead-in cable for connecting the antenna to your receiver by taking two lengths of wire and twisting them loosely together as shown in Figure 1. Attach one wire to each end of the single-turn loop at the antenna. Connect each of these wires to one of the connection terminals of your antenna connector plug at the other end.

If you use a coax connector, either wire can go to the center pin, the other goes to the grounded outer connector terminal.



8. Insert the bottom end of the upright frame piece into the base, and attach the connector to your receiver. You are now ready to begin using this antenna.

Tips on Operating the Antenna

For ordinary reception, you will still use whatever antenna you have been using. But when interference makes reception a problem, try the loop. With the regular antenna connector removed from your receiver, and the loop connected, tune the loop capacitor until the signal your receiver is tuned to peaks in loudness in your receiver. Then rotate the loop so that the cross-arm moves in a circle, horizontally, all the while listening to the interference.

Surprisingly, the secret of success at this point is to listen for minimum interference, not for maximum loudness of the signal which you want.

The null in the antenna's reception pattern is very sharp and it is easy to rotate past its most effective position without noticing it at times. So listen closely and rotate the antenna carefully. When you have obtained the best null on the interference, you might try tilting the antenna vertically. This sometimes gives an even better null.

Once you learn to use the Super-Looper, you will be surprised at the ability it has to null out offending interference in many situations. Happy monitoring!

RADIO RIDDLES

Last month: We featured a cubical quad beam antenna, and I asked you: "What, if any, relationship is there between the cubical quad and the Yagi-Uda?"

Well, years ago Clarence Moore had the idea of pulling the wires of a folded dipole apart so that they formed a diamond-shape or square. This became the basic antenna element of his cubical quad antenna design.

In the quad, these square-shaped

elements are employed as driven-element, reflector and director the same way as are linear dipoles in the Yagi-Uda with diamond-loop elements rather than linear half-wave dipole elements.

And, now-a-days, a cross between the Yagi-Uda and the quad has produced an off-spring that hams call the "Quagi!" What won't they think of next?

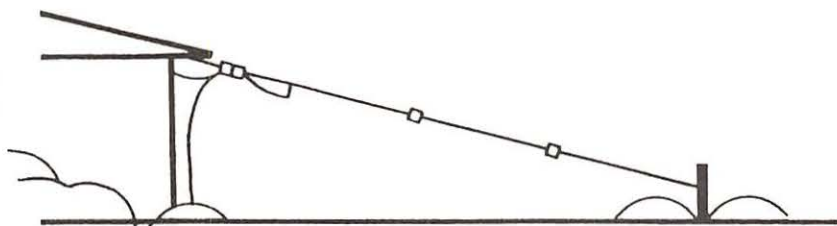
This month: You may recall that recently this column had reference to "romantic antennas," (the rhombic antenna which is constructed of two "mouth-to-mouth" V-antennas). Just above, I mentioned antennas having "off-spring."

We've all heard of "active" antennas, I'm sure. Last month, we discovered "lazy" antennas. So, I ask you: "Just how human can an antenna get?" For the surprising answer to this seemingly impertinent question, tune in next month. 'Til then, Peace, DX, and 73.

mt

* "Goop" is a registered trademark of the Eclectic Products Company, Carson, CA

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Q. I have seen ads in trade magazines for a ruggedized mobile scanner from Uniden, the MR8100, but nowhere is it for sale by Bearcat scanner dealers; how come? (Several inquirers)

A. Programmed by an external computer and retailing for a sizable \$499, the MR8100 is imported directly from Japan by two land mobile communications equipment dealers, Talley Electronics and Page-Com. It is not available through Uniden Scanner dealers in the U.S..

Q. After performing the cellular restoration surgery on the Realistic PRO2005 scanner, how does one get it to search in 30 kHz increments? (Gerald Donnelly, Winston-Salem, NC)

A. Gerald wrote back to let us know he had answered his own question. Just as with the earlier PRO2004, after cellular restoration simply press the front-panel RESET button, and the 2005 will search in the correct 30 kHz increments through the cellular band.

Q. How can I keep the BNC antenna connector on my

Bearcat 200 XLT from coming loose after numerous connects and disconnects of an external antenna? (Several inquirers)

A. Larry DeFalco of White Plains, New York, suggests putting a dab of "Loc-Tite," a readily-available cement made for just such a purpose, on the threads prior to tightening the nut which worked loose. Other readers have suggested a drop of cyoacrylate instant glue ("Crazy Glue").

Q. Old Hallicrafters receivers had their signal strength meters calibrated in microvolts; that makes more sense to me than S units. Why don't manufacturers continue the earlier practice? (Richard Frcho, Willoughby, OH)

A. For microvolts to be accurately expressed, the impedance of the antenna and receiver must remain at some nominal level, typically 50 ohms, and the signal level must be measured at the antenna input. Modern signal strength meters, however, are activated by voltages on the automatic gain control (AGC) line which varies from band to band, design to design and receiver to receiver. A meter calibrated in microvolts would be meaningless.

For this reason, the more arbitrary (and

much cruder) system of signal strength units was adopted, with S-9 typically (hopefully) representing a signal strength of 50 microvolts at 50 ohms.

Q. My scanner has a prominent "birdie" which interferes with one of my primary monitoring channels. Can anything be done? (Richard Greenstein, Bowie, MD)

A. All receivers generate some birdies, small oscillations which they receive on certain frequencies. In most cases, manufacturers will realign the circuitry so that the birdie falls on a nearby, less important frequency. Contact their customer service department for details.

Q. Can a CB/AM/FM "disguise" antenna work as well as a dedicated CB antenna? (Jerry Gates, Charleston Heights, SC)

A. If the splitter/matching circuitry is properly designed, the antenna should radiate as well as a short, loaded CB antenna of the same length.

Q. Would there be an advantage for pocket AM radios to go down to 500 kHz or lower to get additional stations? How about higher than 1600 kHz? (Robert Brock, Phoenix, AZ)

A. In North America, the AM broadcasting band is 540-1600 kHz, due to be extended to 1700 kHz in mid-1990. In Europe there are AM broadcasters for their own domestic service in the 150-400 kHz range, but they are rarely heard in the U.S. even with elaborate monitoring equipment.

Q. Our police department has installed a Motorola digital system in their cars and they call it "MDT". I believe it operates above 800 MHz but can't find it on the air or in a scanner list. How come? (Charlie Solie, Las Cruces, NM)

A. "MDT" stands for "mobile data terminal" and it is used to send keyboard-typed messages back and forth between the vehicles and headquarters. It can be used on any

Bob's Tip of the Month:

Pocket Frequency Counters

The Myth and the Reality --

The many mentions about the use of pocket frequency counters in identifying unknown frequencies for walkie-talkies, base stations and mobile transmitters has spurred a rush of optimistic buying of these clever and useful devices.

Unfortunately, many prospective users expect too much. Familiar with scanners, they assume that if they come anywhere near a transmitter when it is on, they will immediately see its frequency.

With counter in hand, or attached to a rooftop antenna in a vehicle, these sleuths cruise busy streets trolling for cordless telephones, undercover communications and bugs. But the display constantly changes, giving erratic, random readings.

Frequency counters are not at all like radio receivers. While radios can select one specific frequency to receive, frequency

counters have untuned, wideband preamplifiers; they expect just one signal to arrive and be measured.

Out in the country, away from competitive radio signals and other electrically-generated interference, a 1-watt walkie-talkie may give a solid reading on a pocket frequency counter for 100 feet or more. In the city, barraged by signals from every direction, it may require that the frequency counter antenna be shortened to prevent the measuring of undesired signals and brought within a few feet -- or even a few inches -- of the transmitter to get a valid, stable reading.

Your frequency counter is a precision-made piece of test equipment which performs best under controlled conditions. Never connect it directly to a transmitter; extend the antenna only long enough to get a stable reading from the transmitter's own antenna.

Questions or suggestions sent to "Ask Bob," c/o MT, are printed in this column as space permits. If you prefer a reply by return mail, you must enclose a self-addressed, stamped envelope.

frequency assignable to the agency utilizing the system.

Perhaps a new frequency has been assigned by the FCC to your local police department, one which has not yet been picked up by scanner directory publishers. The FCC is usually several months behind even in updating their own lists of new licensees.

You will recognize the characteristic (and very irritating!) "g-r-r-r-rack" sound of the data stream when it is transmitted on a channel.

Q. Is it possible to modify an AM/FM radio to hear aircraft or marine radio, or do they operate on SSB? (Gavin Khoo, Singapore)

A. At VHF, aircraft use amplitude modulation (AM) and boats use frequency modulation (FM). While it is possible to detune the oscillator and RF coils of the FM section of an AM/FM radio to cover the appropriate frequencies, the wideband FM detector will require very strong local marine and aircraft signals to be heard. Better get a scanner!

Q. I tried hooking a GRE 800 MHz converter to my Radio Shack PRO-32 scanner and it didn't work, yet connected to another scanner, it worked just fine? How come? (Joe O'Brien, Bronx, NY)

A. The GRE unit is simply a 400 MHz block down-converter. If your scanner is capable of tuning 410-512 MHz FM, you will hear 810-912 MHz when the GRE is connected between the scanner and the antenna. There is no reason why the PRO-32 should not work.

Q. I saw an old speech descrambler with a three-wire (red, black, green) cable. How is it hooked up? (James Butler, Red Bank, NJ)

A. Before possession, sale and use of a scrambled-speech decoder was made unlawful by the 1986 Electronic Communications Privacy Act, several manufacturers including Krystal Kits, Capri, Grove and Don Nobles manufactured speech inversion descramblers. Chances are you have one of the Nobles

(DNE) models. Even if you haven't, chances are that the procedure will work on your model.

Plug a two-wire miniplug into the external speaker jack of the scanner. The wire connected to the barrel (chassis) of the miniplug should be attached to the black wire and to one terminal of the external speaker.

Connect the red wire to the other miniplug lead (miniplug tip) and the green wire to the remaining speaker terminal. If that doesn't work, reverse the green and red wire connections.

Q. Why do governments of different countries put their programs on the same frequencies at the same time, causing interference? (Donald Michael Choleva, Euclid, OH)

A. There are only so many frequencies to go around and, depending upon propagation of the signal, somewhere you will hear them both, while at other locations you will hear only one of them.

Occasionally the interference is deliberate jamming; usually, however, it is a matter of one broadcaster hoping his signal is strong enough in the target country to override that of a co-channel broadcaster.

Q. Did Radio Shack do right by us monitoring enthusiasts when they replaced the popular PRO2004 scanners so quickly with a follow-on, the PRO2005? (Roger West, Amery, WI)

A. It is standard practice for manufacturers to be planning a replacement for a model before that model is even introduced. The PRO2005 was scheduled to replace the PRO2004 in the fall of 1989, but was released in the spring, according to a Radio Shack spokesperson, because MT had prematurely announced its impending introduction.

This may be a convenient excuse; it is more likely, in my opinion, that poor quality control hastened the demise of the PRO2004.

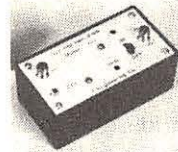
Q. Can public-address intercoms such as I hear paging car dealers on their lots be heard on scanners? (Richard Vaught, Duncansville, PA)

Longwave Listeners - are you troubled by cumbersome tuners, BC intermod, and poor sensitivity?

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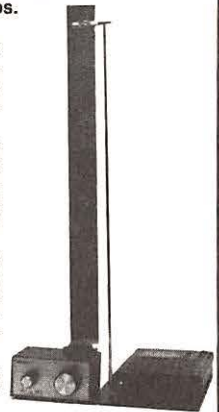
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A. No. Such intercom and paging systems are wired and radiate no radio signals.

EXTRA KEYBOARD FUNCTION ON YOUR BC760XLT:

While the manual doesn't tell you, you can single-step through the search mode of your Uniden BC760XLT simply by pressing HOLD or LMT in the search mode. Pressing HOLD allows you to step higher in frequency, while pressing LMT allows you to step lower in frequency.

LETTERS

continued from page 3

"I know, I know," our anonymous writer continues. "If this is causing me so much anguish, I should just turn off the scanner or listen to less tantalizing frequencies."

"I regret not giving you my name and address but I am afraid that soon some district attorney is going to address this problem for me and I don't care to hear my name mentioned when he calls his wife to tell her why he's going to be late for supper."

"As a former Eastern Air Line pilot and Naval communications intelligence gathering aircraft commander (as well as an active shortwave listener and Extra Class Ham), I was astounded to discover that business cellular users had no idea their conversations were being overheard. I've been forced to make a career change." So says Thomas Bernie of Gloucester, Massachusetts.

"I've put together a consulting firm, the goal of which is to educate cellular users of the security risks associated with cellular use and to provide them with a means of coping."

Mr. Bernie is offering a security kit that includes a report on the risks of cellular telephones, a 20 page booklet entitled "Cellular Security...A Users Guide" and a couple of warning stickers that read, "Privacy of communications may not be ensured when using this phone." The kit is available for \$25.00 from Cellular Security Group, 4 Gerrig Road, Gloucester, Massachusetts 01930.

Enclosed please find photographs of my shortwave listening post," says reader Chris Kissel. As you can see, Kissel goes about things in a pretty serious way. "In addition to being unusual for the vertical placement of the equipment, my set-up is optimized for higher fidelity shortwave listening."

It includes a R39-A/URR modified by Kissel with 2, 4, 8, and 16 kHz mechanical filters, a Panoramic Radio Products PR-1 Panadaptor (that's the box with the circular screen on it), a dbx model 563X single ended noise reduction unit, a dbx model 463X over-easy noise gate, "a home-built synchronous detector with selectable lower, upper, double and independent sideband true synchronous detection with a hold function for lock during deep fades," Sony MDR-V4 headphones and a Kenwood cassette deck.

Folks, don't try this at home yourself! Kissel is a 29 year old associate electrical engineer who works on ultra-stable time and frequency sources, "primarily for spacecraft." Chris and his wife are expecting their first child in June.

The same day we received Chris Kissel's letter we ran into Chris at the Winter SWL Fest in Kulpville, Pennsylvania, which, incidentally, was a lot of fun. We'll get you some information on it as the next one rolls around.

In the meantime, if you enjoy radio, then be sure to mark your calendar for October 5, 6 and 7th. That's the date for the big *Monitoring Times* convention in Knoxville, Tennessee. Not only will we all have the chance to get together and chat radio until the wee hours, but I assure you that you will think that you died and went to radio heaven.

Wayne Mischler wrote in to say that he enjoyed reading the pair of articles we ran on NORAD. "This was good reporting and writing, and I found the articles most informative. Like many people who have visited Colorado Springs, I have seen the Mystic antenna farm atop Cheyenne Mountain and wondered about NORAD and its operations."

Wayne also compliments Rod Pearson on his Federal File column. "It's informative and good reading. Everything else in your fine magazine is a bonus."

Readers should remember Wayne for a number of super articles in *Monitoring Times*, including our first attempt at fiction, "The Last Radio Signal on Earth." And in case we have never done so publicly, we'd like to applaud Wayne for his daring in taking part in

our experiment into the realm of fiction. The idea of running fiction was ours; but Wayne shared the risk by bravely attaching his name to the article. It's always an honor and a pleasure to work with pros like Wayne.

"Recently," advises Virginia reader David Wilson, "the local power company installed a device on my water heater that was to turn it off during times of power shortage."

"I immediately discovered that this device emitted a good deal of radio interference, particularly around the 137 MHz weather satellite band and the 2 meter ham band. My antenna was over 60 feet from the device. It was labeled Model No. Y96365-1 TWACS Listed 55L3 Chance Load Management Systems Load Control Transponder."

Leslie Edwards, all-around great lady extraordinaire, writes to say that our 2200 UTC listing in the frequency section for the Voice of UAE Abu Dhabi, United Arab Emirates, should be United Arab Emirates Radio from Abu Dhabi or UAR Radio from Abu Dhabi. The word "voice," says Leslie, is not used. Thanks, Leslie, we'll pass that along to Greg Jordan, our near super-human frequency manager.

Another nice lady, newcomer Barbara Brown of Rancho Sante Fe in California, writes to say that she enjoys shortwave as "a great alternative to AM/FM radio." Just starting out, she subscribed to *Monitoring Times* and found it "helped a lot with respect to knowing what frequencies to tune to when."

"However," continues Barbara, "the magazine has no beginners' section. Since more and more people are turning to shortwave and are beginners just like me, wouldn't it be a good idea to have a recurring or repeating section or "notes" for beginners?"

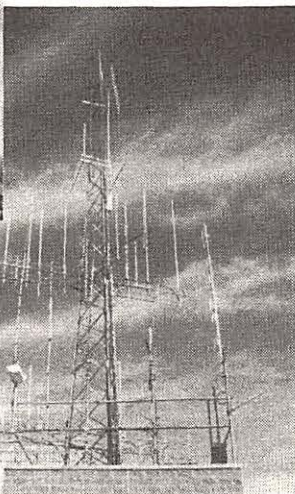
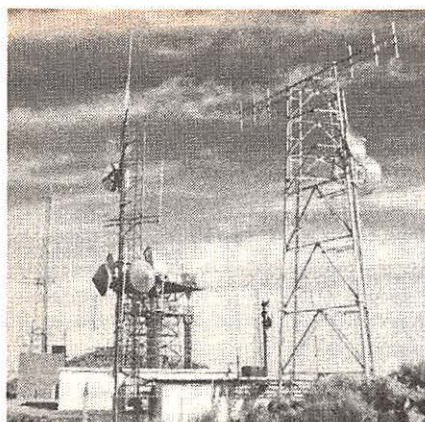
Or, we suggest ourselves, be a little more diligent in pruning out excessive abbreviations and explaining basic terms when they occur. A point well taken, Barbara. Thanks for taking the time to write.

Remember -- we always welcome your feedback at *Monitoring Times*. While we obviously try to do the best job humanly possible, should you see something you don't like or that is incorrect, rest assured that you won't offend us by pointing it out. That kind of criticism is always welcome here and only serves to improve the magazine. Take a moment to jot down the address: P.O. Box 98, Brasstown, NC 28902.

"How come you don't run a section listing the times, frequencies and schedules of



Chris Kissel



John Strand

the various DX shows?" asks reader Sam Keller of New York City. We do, Sam, just not all at once. Look for them in Kannon Shanmugam's program section.

Finally, John Strand of Bakersfield, California, checks in with a pair of photographs. They were taken at a radio site in the El Paso mountains north of the Mojave desert.

"The building belongs to my friend Ed Tippler, who owns Tortoise Communications; the building with the horns on it is an AT&T relay, and the building in the foreground is part of the county system. I am the operations supervisor for AT&T here in central California and every time I visit the mountain tops I carry a camera. This particular opportunity really paid off."

Thanks, John. Hopefully we'll be able to use some future shots on the front cover. Got a camera? Enjoy taking snaps of radio-related subjects? Count us in! We're always looking for "good stuff" (as our graphics department greedily calls such photographic gems). The best candidates for use on the cover are vertically-oriented color snapshots or, preferably, slides. In doubt? Send 'em along to us and we'll be more than happy to take a look. The address for *Monitoring Times* shutterbugs is P.O. Box 98, Brasstown, NC 28902.

We close this month with a rather unusual promotional item for radio station KTFJ, taken from the pages of the National Radio Club. Radio advertising sure has changed, hasn't it?

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Got a comment? We welcome your ideas, responses, and opinions regarding the world of radio. Letters should be addressed to **Letters to the Editor**, *Monitoring Times*, P.O. Box 98, Brasstown, NC 28902 and should include the sender's address and telephone number.

CONVENTION CALENDAR

Date	Location	Club/Contact Person
Apr 1	Grosse Pte Wds, MI/ SE Michigan ARA/ Thomas Orlicki N8HLY	15835 Novara, Detroit, MI 48205-2515
Apr 1	Rockford, IL	Rockford ARC/ Paul Klein K9VJJ 5027 Potomac Dr, Rockford, IL 61107
Apr 6-8	California	41st Int'l DX Convention/ Don Minkoff NK6A 12567 Brooklake St., Mar Vista, CA 90066
Apr 7	Oxnard, CA	Ventura Co ARC/ Bob Bond WD6BCN 1420 McGloughlin Ave, Oxnard, CA 93035
Apr 7	Lebanon, PA	Appalachian Amateur Rpt Group/ Homer Luckenbill WA3YMU 105 Walnut St., Pine Grove, PA 17963 Talk-in: 146.04/.64; 146.52/.52
Apr 7-8	Spokane, WA	Spokane RA/ Ivan Brown KF7PU 1818 W Cleveland Ave, Spokane, WA 99205
Apr 8	Raleigh, NC	NC State Convention/ Chuck Littlewood N4HF 2005 Quail Ridge Rd., Raleigh, NC 27609
Apr 8	Madison, WI	Madison Area RA/ Jim Waldorf KB9AQQ 1922 Thackeray Rd, Madison, WI 53704
Apr 14	Bowling Green, KY	KY Colonel's ARC/ Charles Martin AB4Y P.O. Box 9781, Bowling Green, KY 42102
Apr 14-15	Abilene, TX	W Texas Convention/ Milly Wise W5OVH 8516 Mt. Scott, El Paso, TX 79904
Apr 21	Little Rock, AR	Arkansas Conv/ Bob Hancock KB5IDB 6116 Nicole Dr, N. Little Rock, AR 72118
Apr 22	Southington, CT	Southington ARC/ Milton Chaffee W1EFW 28 Reussner Rd, Southington, CT 06489
Apr 27-29	Dayton, Ohio	Dayton Hamvention/ Bill Schmid WD8LOI 820 Dartmouth, Troy, OH 45373
May 4-6	Buellton, CA	Sanla Barbara ARC/ Alan Soenke WA6VNN 228 Hillview Dr, Goleta, CA 93117
May 4-6	Sierra Vista, AZ	Cochise ARA/ Mike Lading 5108 Leonardo De Vinci, Sierra Vista, CA 85635
May 5	Cedarburg, WI	Ozaukee ARC/ Joe Bauer W9WQ N 5415 Crystal Springs Ct, Fredonia, WI 53201
May 5	Owego, NY	Southern Tier ARC/ Mike Gruszka 3 Londonderry Lane, Owego, NY 13827
May 5-6	Greenville, SC	Blue Ridge ARS/ John Chism ND4N Rt 6, 203 Lanewood Dr, Greenville, SC 29607
May 11-12	S. Sioux City, NE	Iowa State Conv/ Lynn Hansen KN00 2932 Pierce St, Sioux City, IA 51104
May 11-13	Fresno, CA	Fresno ARC/ Edward Plumber KB6LBS 12460 E Heather, Clovis, CA 93612
May 12	Columbia, MO	Central MO RA/ Benton Smith K0PCK 3301 Sinclair, Rt 3 Box 196A, Columbia, MO 65203
May 12	Deerfield, MA	Hoss Traders/ Bill Burden WB1BRE 11 Briand Dr, Nashua, NH 03063
May 13	Medina, OH	Medina M2M Club/ Clarence Miller WA8JLA 620 Oak St, Medina, OH 44256
May 13	Westminster, MD	Summit ARA/ Alan Parker KS3L 1222 Ingleside Ave, Baltimore, MD 21207
May 18-20	Rochester, NY	Atlantic Div/NY State Conv/ Harold Smith K2HC 153 Mason Ave, Rochester, NY 14626
May 20	Wrightstown, PA	Warminster ARC/ Mark Kempisty N3GNW 3854 Moosewood Ave, Trevoise, PA 19047
May 20	Tamaqua, PA	Tamaqua Trans Soc & Antracite Rptr/ Allan Breiner K3NYX 212 Race St, Tamaqua, PA 18252
May 20	Peotone, IL	Kankakee ARS/ Frank DalCanton KA9PWW RR 1 Box 361, Chebanse, IL 60922
May 20	Wheeling, WV	Triple States RAC/ Ralph McDonough KBAN Box 240 RD 1, Adena, OH 43901
May 20	Wabash, IN	Wabash ARC/ Donald Spanger W9HNO 235 Southwood Dr, Wabash, IN 46992
May 20	Paramus, NJ	Bergen ARA/ Jim Joyce K2ZO 286 Ridgewood Blvd No, Westwood, NJ 07675
May 26	Durham, NC	Durham FM Assoc/ Edwin Lappi WD4LOO 203 Lynn Dr, Carrboro, NC 27510

Monitoring Times is happy to run brief announcements of radio events open to our readers. Send your announcements at least 60 days before the event to: *Monitoring Times* Convention Calendar, P.O. Box 98, Brasstown, NC 28902.

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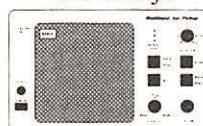
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ECPA Revisited

The Electronic Communications Privacy Act of 1986 (ECPA) was a marketing coup for the enormously wealthy Cellular Telecommunications Industry Association (CTIA). They fooled Congress into believing that cellular telephones are somehow different from other forms of two-way radios, making them inherently private.

If that were true, why was it necessary to seek legal protection against listening in?

The manufacturers' motives are transparent. CTIA members Uniden and Tandy censor cellular frequency coverage in their Realistic and Bearcat scanners to create the illusion of privacy when they market their cellular telephones, but they don't delete the low, high and UHF mobile telephone bands which are also protected under ECPA. Why should they? Compromising the privacy of competitive products is a cellular sales advantage!

Excluded from protection under ECPA is the cordless telephone. It was generally agreed upon that a cordless telephone is little more than a walkie-talkie and the user should have no reasonable expectation of privacy. How the average consumer can spot the difference between a portable cellular phone and a cordless phone defies logic.

A recent appeal by a convicted felon, whose nefarious dealings over his cordless telephone were monitored by a neighbor whose own cordless phone picked up the conversations, was rejected by a judge who sensibly reiterated that the user of a cordless telephone can not expect privacy. A new appeal is planned.

Now the American Civil Liberties Union (ACLU) is urging Congress to add cordless phones to the list of privacy-protected devices. While the ACLU correctly concludes that there is no real difference between cordless and cellular telephones, they miss the real point: neither device can be considered private!

So far there have been no challenges to ECPA in court, although an eventual test case should go far in clarifying the turbid issue. It is a hastily-passed law which needs to be readdressed, not to withdraw traditional American rights, but to interpret ECPA with some bearing on the realities of radio waves.

Let's hope that if and when hearings re-open, equal representation from American radio hobbyists be allowed along with the special interests of Fortune 500 industrialists who will continue to manipulate Congress within a framework of fantasy.

-- Bob Grove, WA4PYQ
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IC-R1. The smallest wideband handheld available today, the IC-R1 continuously covers 100kHz—1300 MHz with AM, FM and Wide-FM modes. This tiny receiver measures just 1.9"W x 4.0"H x 1.4"D.

Easy operation is a snap with the IC-R1's Dual Frequency Selection (direct keyboard and rotary tuning). 100 memories and a 24-hour clock completes the world's smallest full-featured handheld receiver.

IC-R100. Install the IC-R100 at home or in your car. Listening pleasure is guaranteed with continuous coverage from 100kHz—1856MHz in AM, FM and wide FM modes. Monitor VHF air and marine bands, emergency services, government as well as amateur stations. 121 fully programmable memory

channels, multiple scanning system, an automatic noise limiter, built-in preamplifier and attenuator, clock with timer and built-in backup lithium battery make the IC-R100 the perfect package for mobile or base operation.

IC-R72. The IC-R72 continuously receives 100kHz—30MHz in SSB, AM and CW modes with very high sensitivity. An optional UI-8 provides FM reception. Additional

features include: Noise blanker, five scanning systems, AC/DC operation, internal backup battery, built-in clock and ICOM's DDS System. The IC-R72 boasts a 100 dB wide dynamic range while an easy-to-access keyboard provides convenient programming versatility. The easy to operate IC-R72 is superb for short wave listeners.

The IC-R1, IC-R72 and IC-R100 join ICOM's current line of professional quality receivers... the IC-R71A, IC-R7000 and IC-R9000. ICOM... expanding the horizons to bring you better technology, today. See the complete line of quality ICOM receivers at your local authorized ICOM dealer.

For a brochure on this or any other ICOM product, call our Toll-Free Literature Request Hotline 1-800-999-9877.

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